SAMSUNG

User manual

S19E310HY
S22E310HY
S22E310H
S24E310HL
S27E310H

The color and the appearance may differ depending on the product, and the specifications are subject to change without prior notice to improve the performance.

BN46-00452A-01

Table Of Contents

BEFORE USING THE PRODUCT

7 **Copyright**
7 Icons used in this manual
8 **Cleaning**
9 **Securing the Installation Space**
9 **Precautions for storage**
10 **Safety Precautions**
10 Symbols
11 Electricity and Safety
12 Installation and Safety
14 Operation and Safety
18 **Correct posture to use the product**

PREPARATIONS

19 **Checking the Contents**
19 Checking the Components
20 **Parts**
20 Control Panel
21 Direct Key guide
22 Function Key Guide
24 Reverse Side
25 **Installation**
25 Attaching the Stand
26 Removing the Stand
27 Adjusting the Product Tilt
28 Installing a Wall-mount Kit or Desktop Stand
29 Anti-theft Lock

CONNECTING AND USING A SOURCE DEVICE

30 **Before Connecting**
30 Pre-connection Checkpoints
30 **Connecting and Using a PC**
30 Connecting to a PC
32 Connecting the Power
33 Driver Installation
34 Setting Optimum Resolution

Table Of Contents

SCREEN SETUP

35 **Brightness**
35 Configuring **Brightness**

36 **Contrast**
36 Configuring **Contrast**

37 **Sharpness**
37 Configuring **Sharpness**

38 **Eye Saver Mode**
38 Configuring **Eye Saver Mode**

39 **Game Mode**
39 Configuring **Game Mode**

40 **SAMSUNG MAGIC Bright**
40 Configuring **SAMSUNG MAGIC Bright**

42 **SAMSUNG MAGIC Angle (S19E310HY / S22E310HY / S22E310H / S27E310H)**
42 Configuring **SAMSUNG MAGIC Angle**

44 **SAMSUNG MAGIC Upscale**
44 Configuring **SAMSUNG MAGIC Upscale**

46 **Image Size**
46 Changing the **Image Size**

48 **HDMI Black Level**
48 Configuring the **HDMI Black Level** Settings

50 **Response Time (S24E310HL / S27E310H)**
50 Configuring the **Response Time**

51 **H-Position & V-Position**
51 Configuring **H-Position** & **V-Position**

53 **Coarse**
53 Adjusting **Coarse**

54 **Fine**
54 Adjusting **Fine**

Table Of Contents

CONFIGURING TINT

55 **Red**
55 Configuring **Red**

56 **Green**
56 Configuring **Green**

57 **Blue**
57 Configuring **Blue**

58 **Color Tone**
58 Configuring the **Color Tone** Settings

59 **Gamma**
59 Configuring **Gamma**

COORDINATING OSD

60 **Language**
60 Configuring **Language**

61 **Menu H-Position & Menu V-Position**
61 Configuring **Menu H-Position** & **Menu V-Position**

62 **Display Time**
62 Configuring **Display Time**

63 **Transparency**
63 Changing **Transparency**

SETUP AND RESET

64 **Reset All**
64 Initializing Settings (**Reset All**)

65 **Eco Saving Plus**
65 Configuring **Eco Saving Plus**

66 **Off Timer**
66 Configuring **Off Timer**
67 Configuring **Turn Off After**

68 **PC/AV Mode**
68 Configuring **PC/AV Mode**

Table Of Contents

69 **Key Repeat Time**
69 Configuring **Key Repeat Time**

70 **Source Detection**
70 Configuring **Source Detection**

71 **Power LED On**
71 Configuring Power LED On

INFORMATION MENU AND OTHERS

72 **INFORMATION**
72 Displaying **INFORMATION**

73 **Configuring Brightness, Contrast and Sharpness from the Initial Screen**

INSTALLING THE SOFTWARE

74 **Easy Setting Box**
74 Installing the Software
75 Removing the Software

TROUBLESHOOTING GUIDE

76 **Requirements Before Contacting Samsung Customer Service Center**
76 Testing the Product
76 Checking the Resolution and Frequency
76 Check the following.

79 **Q & A**

SPECIFICATIONS

81 **General (S19E310HY)**

82 **General (S22E310HY / S22E310H)**

83 **General (S24E310HL)**

84 **General (S27E310H)**

85 **PowerSaver**

86 **Standard Signal Mode Table**

APPENDIX

89 **Contact SAMSUNG WORLD WIDE**

Table Of Contents

97 **Responsibility for the Pay Service (Cost to Customers)**

97 Not a product defect

97 A Product damage caused by customer's fault

97 Others

98 **Correct Disposal**

98 Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

99 **Terminology**

INDEX

Copyright

The contents of this manual are subject to change without notice to improve quality.

© 2015 Samsung Electronics

Samsung Electronics owns the copyright for this manual.

Use or reproduction of this manual in parts or entirety without the authorization of Samsung Electronics is prohibited.

Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation.

VESA, DPM and DDC are registered trademarks of the Video Electronics Standards Association.

- An administration fee may be charged if either
  - (a) an engineer is called out at your request and there is no defect in the product (i.e. where you have failed to read this user manual).
  - (b) you bring the unit to a repair center and there is no defect in the product (i.e. where you have failed to read this user manual).
- The amount of such administration charge will be advised to you before any work or home visit is carried out.

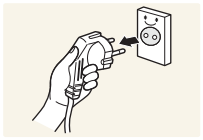
Icons used in this manual

	The following images are for reference only. Real-life situations may differ from what is shown in the images.

Cleaning

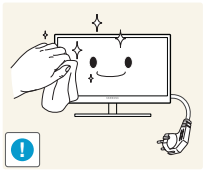
Exercise care when cleaning as the panel and exterior of advanced LCDs are easily scratched.

Take the following steps when cleaning.



1. Power off the monitor and computer.
2. Disconnect the power cord from the monitor.

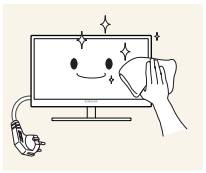
Hold the power cable by the plug and do not touch the cable with wet hands. Otherwise, an electric shock may result.



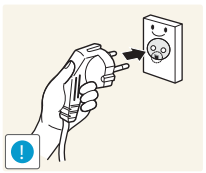
3. Wipe the monitor screen using a clean, soft and dry cloth.

- Do not apply a cleaning agent that contains alcohol, solvent, or surfactant to the monitor.

- Do not spray water or detergent directly on the product.



4. Wet a soft and dry cloth in water and wring thoroughly to clean the exterior of the monitor.

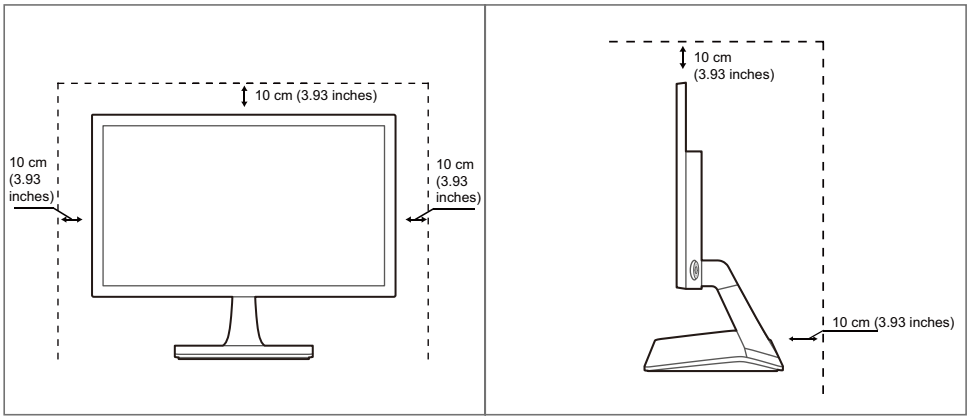


5. Connect the power cord to the product after cleaning the product.
6. Power on the monitor and computer.

Securing the Installation Space

- Ensure some space around the product for ventilation. An internal temperature rise may cause fire and damage the product. Be sure to allow the amount of space as shown below or greater when installing the product.

The exterior may differ depending on the product.



Precautions for storage

Be sure to contact Samsung Customer Service Center (page 89) if the inside of the monitor needs cleaning. (A service fee will be charged.)

Safety Precautions

Caution
RISK OF ELECTRIC SHOCK DO NOT OPEN
Caution: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER ALL SERVICING TO QUALIFIED PERSONNEL.

	This symbol indicates that high voltage is present inside. It is dangerous to make any kind of contact with any internal part of this product.
	This symbol alerts you that important literature concerning operation and maintenance has been included with this product.

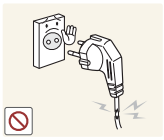
Symbols

Warning	A serious or fatal injury may result if instructions are not followed.
Caution	Personal injury or damage to properties may result if instructions are not followed.
	Activities marked by this symbol are prohibited.
	Instructions marked by this symbol must be followed.

Electricity and Safety

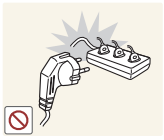
The following images are for reference only. Real-life situations may differ from what is shown in the images.

Warning



Do not use a damaged power cord or plug, or a loose power socket.

- An electric shock or fire may result.

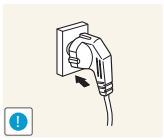


Do not plug many products into the same power socket.

- Otherwise, the socket may overheat and cause a fire.

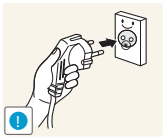
Do not touch the power plug with wet hands.

- Otherwise, an electric shock may result.



Insert the power plug all the way in so it is not loose.

- An unstable connection may cause a fire.



Ensure you connect the power plug to a grounded power socket. (type 1 insulated devices only).

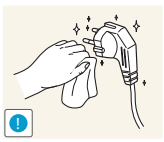
- An electric shock or injury may result.

Do not bend or pull the power cord with force. Do not weigh the power cord down with a heavy object.

- A damaged power cord may cause an electric shock or fire.

Do not place the power cord or product near heat sources.

- An electric shock or fire may result.



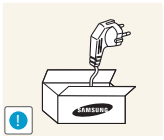
Remove foreign substances such as dust around the plug pins and power socket with a dry cloth.

- Otherwise, a fire may result.

Caution

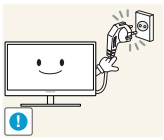
Do not unplug the power cord when the product is in use.

- The product may become damaged by an electric shock.



Do not use the power cord for products other than authorized products supplied by Samsung.

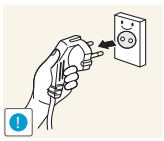
- An electric shock or fire may result.



Keep the power socket where the power cord is connected unobstructed.

- If any problem occurs in the product, unplug the power cable to completely cut the power to the product.

  Power to the product cannot be completely cut off with the power button.



Hold the plug when disconnecting the power cord from the power socket.

- An electric shock or fire may result.

Installation and Safety

Warning

DO NOT PLACE CANDLES, INSECT REPELLANTS OR CIGARETTES ON TOP OF THE PRODUCT. DO NOT INSTALL THE PRODUCT NEAR HEAT SOURCES.

- Otherwise, a fire may result.

Avoid installing the product in a narrow space with bad ventilation, such as a bookshelf or wall closet.

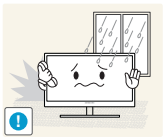
- Otherwise, a fire may result due to an increased internal temperature.

Keep the plastic packaging bag for the product in a place that cannot be reached by children.

- Children may suffocate.

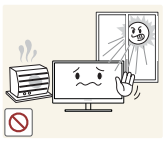
Do not install the product on an unstable or vibrating surface (insecure shelf, sloped surface, etc.).

- The product may fall and break or cause a personal injury.
- Using the product in an area with excess vibration may damage the product or cause a fire.



Do not install the product in a vehicle or a place exposed to dust, moisture (water drips, etc.), oil, or smoke.

- An electric shock or fire may result.



Do not expose the product to direct sunlight, heat, or a hot object such as a stove.

- Otherwise, the product lifespan may be reduced, or a fire may result.

Do not install the product within the reach of young children.

- The product may fall and injure children.

Edible oil, such as soybean oil, can damage or deform the product. Do not install the product in a kitchen or near a kitchen counter.

Caution

Take care not to drop the product when moving it.

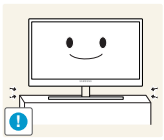
- Otherwise, product failure or personal injury may result.

Do not set down the product on its front.

- The screen may become damaged.

When installing the product on a cabinet or shelf, make sure that the bottom edge of the front of the product is not protruding.

- The product may fall and break or cause a personal injury.
- Install the product only on cabinets or shelves of the right size.



Put down the product carefully.

- The product may fall and break or cause a personal injury.

Installing the product in an unusual place (a place exposed to a lot of fine dust, chemical substances, extreme temperatures or a significant presence of moisture, or a place where the product will operate continuously for an extended period of time) may seriously affect its performance.

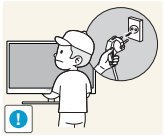
- Be sure to consult Samsung Customer Service Center (page 89) before installation if you want to install the product at such a place.

Operation and Safety

Warning

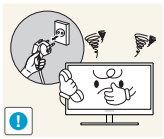
High voltage runs through the product. Do not attempt to disassemble, repair, or modify the product on your own.

- An electric shock or fire may result.
- Contact Samsung Customer Service Center (page 89) for repair.



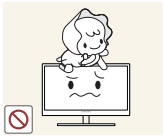
To move the product, first disconnect all the cables from it, including the power cable.

- Otherwise, the power cord may be damaged and a fire or electric shock may result.



If the product generates a strange noise, a burning smell, or smoke, remove the power cord immediately and contact Samsung Customer Service Center (page 89).

- An electric shock or fire may result.



Do not let children hang from the product or climb on top of it.

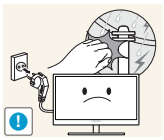
- The product may fall, and your child may become injured or seriously harmed.

If the product falls or the exterior is damaged, power off the product, remove the power cord, and contact Samsung Customer Service Center (page 89).

- Otherwise, an electric shock or fire may result.

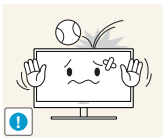
Do not put a heavy object, toy, or sweets on top of the product.

- The product or heavy objects may fall as children try to reach for the toy or sweets resulting in a serious injury.



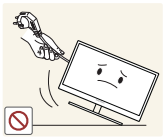
If there is a thunderstorm or lightning strike, turn off the power and disconnect the power cable.

- An electric shock or fire may result.



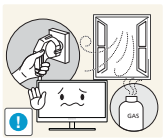
Do not drop objects on the product or apply impact.

- An electric shock or fire may result.



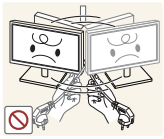
Do not move the product by pulling the power cord or any cable.

- Otherwise, the cable may be damaged and product failure, an electric shock or fire may result.



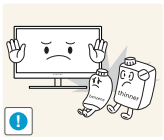
If a gas leakage is found, do not touch the product or power plug. Also, ventilate the area immediately.

- Sparks can cause an explosion or fire.



Do not lift or move the product by pulling the power cord or any cable.

- Otherwise, the cable may be damaged and product failure, an electric shock or fire may result.



Do not use or keep combustible spray or an inflammable substance near the product.

- An explosion or fire may result.

Ensure the vents are not blocked by tablecloths or curtains.

- Otherwise, a fire may result from an increased internal temperature.

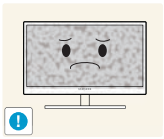
Do not insert a metallic object (a chopstick, coin, hair pin, etc.) or inflammable object (paper, match, etc.) into the vent or ports of the product.

- If water or any foreign substance enters the product, be sure to power off the product, remove the power cord, and contact Samsung Customer Service Center (page 89).
- Product failure, an electric shock or fire may result.

Do not place objects containing liquid (vases, pots, bottles, etc) or metallic objects on top of the product.

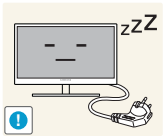
- If water or any foreign substance enters the product, be sure to power off the product, remove the power cord, and contact Samsung Customer Service Center (page 89).
- Product failure, an electric shock or fire may result.

Caution



Leaving the screen fixed on a stationary image for an extended period of time may cause afterimage burn-in or defective pixels.

- If you are not going to use the product for an extended period of time, activate power-saving mode or a moving-picture screen saver.

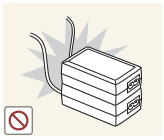


Disconnect the power cord from the power socket if you do not plan on using the product for an extended period of time (vacation, etc.).

- Otherwise, a fire may result from accumulated dust, overheating, an electric shock, or electric leakage.

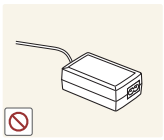
Use the product at the recommended resolution and frequency.

- Otherwise,Your eyesight may deteriorate.



Do not put DC power adapters together.

- Otherwise, a fire may result.



Remove the plastic bag from the DC power adapter before you use it.

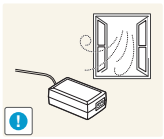
- Otherwise, a fire may result.

Do not let water enter the DC power device or get the device wet.

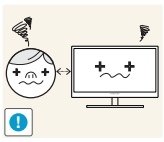
- An electric shock or fire may result.
- Avoid using the product outdoors where it can be exposed to rain or snow.
- Be careful not to get the DC power adapter wet when you wash the floor.

Do not put the DC power adapter near to any heating apparatus.

- Otherwise, a fire may result.



Keep the DC power adapter in a well-ventilated area.



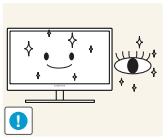
Looking at the screen too close for an extended period of time can deteriorate your eyesight.

Do not hold the monitor upside-down or move it by holding the stand.

- The product may fall and break or cause a personal injury.

Do not use humidifiers or stoves around the product.

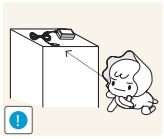
- An electric shock or fire may result.



Rest your eyes for more than 5 minutes for every 1 hour of product use.

- Eye fatigue will be relieved.

Do not touch the screen when the product has been turned on for an extended period of time as it will become hot.



Store the small accessories used with the product out of reach of children.

Exercise caution when adjusting the product angle or stand height.

- Otherwise, children's fingers or hands may become stuck and injured.
- Tilting the product excessively may cause it to fall and result in personal injury.

Do not place heavy objects on the product.

- Product failure or personal injure may result.

Correct posture to use the product

Use the product in the correct posture as follows:

- Straighten your back.
- Allow a distance of 45 to 50 cm between your eye and the screen, and look slightly downward at the screen.

  Keep your eyes directly in front of the screen.
- Adjust the angle so light does not reflect on the screen.
- Keep your forearms perpendicular to your upper arms and level with the back of your hands.
- Keep your elbows at about a right angle.
- Adjust the height of the product so you can keep your knees bent at 90 degrees or more, your heels attached to the floor, and your arms lower than your heart.

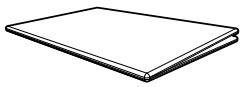
1 Preparations

1.1 Checking the Contents

1.1.1 Checking the Components

- Contact the dealer from whom you purchased the product if any item is missing.
- The appearance of the components and items sold separately may differ from the image shown.

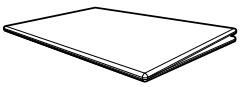
Components



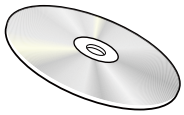
Quick Setup Guide

Warranty card

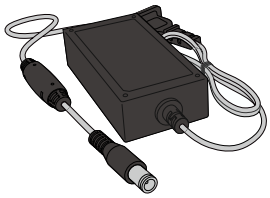
(Not available in some locations)



Regulatory guide



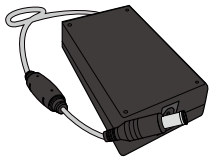
User manual (optional)



DC power adapter

(Integrated)

(optional)



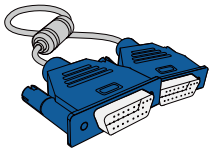
DC power adapter

(Detachable)

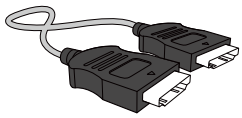
(optional)

Power cable

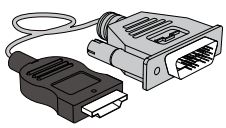
(Only provided with the detachable DC power adapter.)



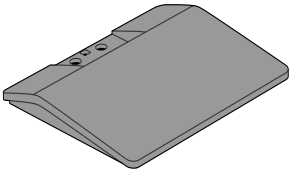
D-SUB cable (optional)



HDMI cable (optional)



HDMI-DVI cable (optional)



Stand base

Stand neck

Components may vary depending on the country.

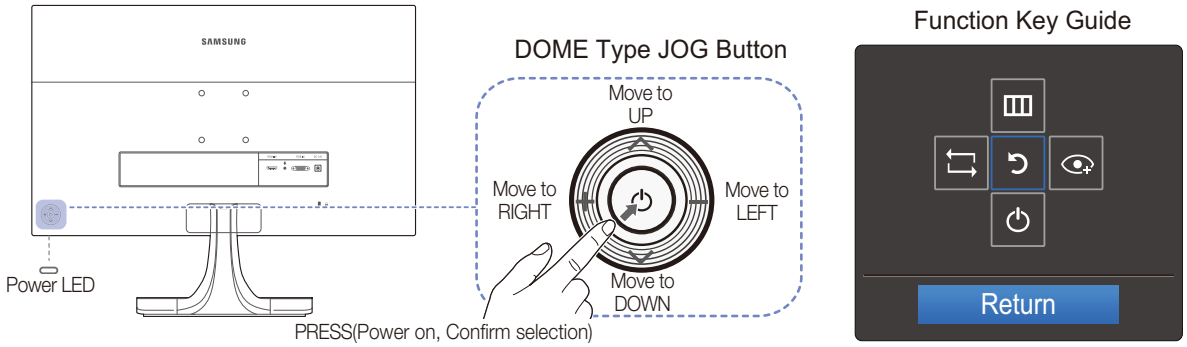
1.2 Parts

1.2.1 Control Panel

The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

To activate the button on the product, press the [⏻/∧/∨/—/+] etching position exactly.

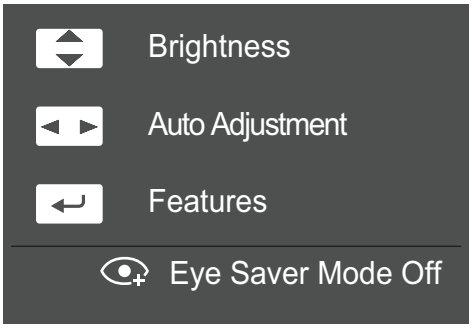
Press the other position may cause wrong action.



Icons	Description
Power LED	This LED is power status indicator and works as • Power on (Power button): Off • Power saving mode: Blinking • Power Off (Power button): On The power Indicator operation can be swapped by changing in the menu. (**SETUP&RESET → Power LED On**) Actual models because of functional variation maybe haven't this function.
Function Key Guide	Press the [⏻] button when the screen is turned on. The Function Key Guide will appear. To access the onscreen menu when the guide is displayed, press the corresponding direction button again. Function Key Guide may vary depending on the function or product model. Please refer to the actual product.

1.2.2 Direct Key guide

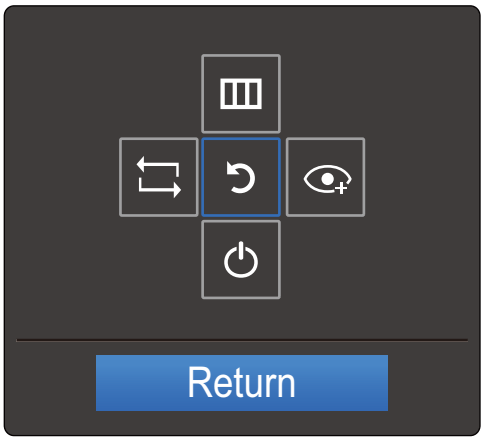
For guidance on shortcut keys, the OSD (On Screen Display) will appear if you press any button of [∧/∨/−/+].



- Press [∧/∨] button: Adjust **Brightness**.
- Press [−/+] button: Adjust the screen settings automatically.
  - Changing the resolution in Display Properties will activate the **Auto Adjustment** function.
  - This function is only available in **Analog** mode.
- Press [⏻] button: Display Function Key Guide.

1.2.3 Function Key Guide

To enter the main menu or to use other items, press the [⏻] button to display the Function Key Guide. You can exit by pressing the [⏻] button again.



- Press ∧/∨/—/+ button: Move to the item you want. The description for each item will appear when the focus changes.
- Press [⏻] button: The selected item will be applied.

Icons	Description
⇄	Select [⇄] to change the input signal by pressing the [—] button on the Function Key Guide screen. A message will appear on the top left corner of the screen if the input signal has been changed.
▥	• Select [▥] by pressing the [∧] button on the function key guide screen. The OSD (On Screen Display) of your Monitor's feature appears. • OSD control lock: Maintain the current settings, or lock the OSD control to prevent unintended changes to settings. Enable/Disable: To lock/unlock the OSD control, press the [—] button for 10 seconds when the main menu displayed. If the OSD control is locked, Brightness and Contrast can be adjusted. Eye Saver Mode is available. SETUP&RESET → Power LED On is available. INFORMATION can be viewed.

Icons	Description
	Select [ ] by pressing the [+] button on the function key guide screen. Press to enable or disable **Eye Saver Mode**. The items below are not available if the **Eye Saver Mode** function is enable. • **PICTURE** → **Brightness**, **Game Mode**, **SAMSUNG MAGIC Bright**, **SAMSUNG MAGIC Angle** • **COLOR** • **SETUP&RESET** → **Eco Saving Plus**
	Select [ ] to turn the Monitor off by pressing the [∨] button on the function key guide screen.

Actual models because of functional variation, Function key guide options will be different.

Please run the corresponding function based on the actual icon and description.

When the monitor displays nothing (i.e. Power saving mode or Non-signal mode), 2 direct keys for control source and power could be used as below.

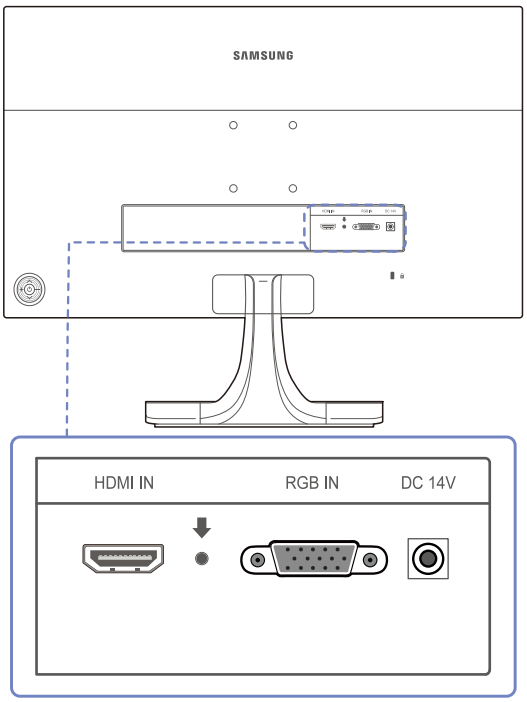
DOME Type JOG Button	Power saving/Non-signal mode
∧	Source Change
∨	
PRESS [ ] button for 2 seconds	Power Off

When the monitor displays the Main menu the DOME Type JOG Button could be used as below.

DOME Type JOG Button	Action
∧/∨	- Move the option
−	- Exit the Main menu. - Close Sublist without saving value. - Value decreases in the slider.
+	- Move to next depth. - Value increases in the slider.
	- Move to next depth. - Save the value and close Sublist.

1.2.4 Reverse Side

- The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.
- The exterior may differ depending on the product.

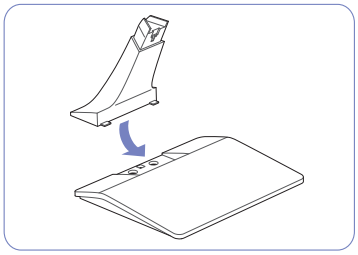


Port	About ports
HDMI IN	Connect to a source device using an HDMI cable.
RGB IN	Connect to a PC using the D-SUB cable.
DC 14V	Connects to the DC power adapter.

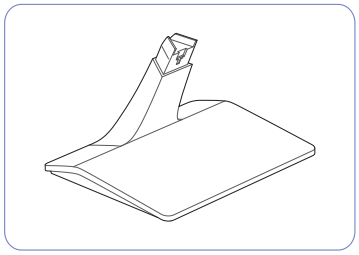
1.3 Installation

1.3.1 Attaching the Stand

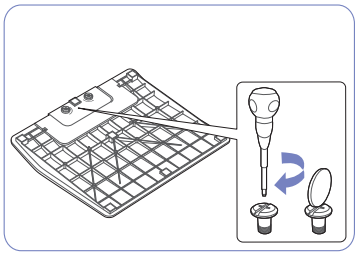
- Before assembling the product, place the product down on a flat and stable surface so that the screen is facing downwards.
- The exterior may differ depending on the product.



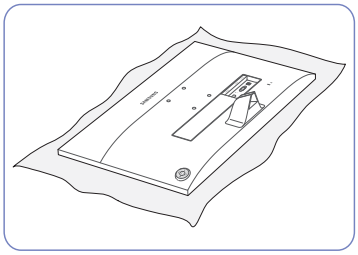
Insert the stand neck into the stand base in the direction shown in the figure.



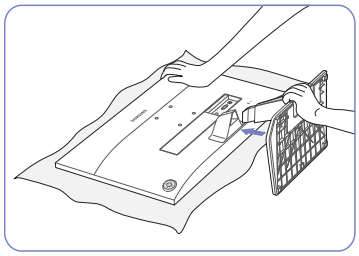
Check that the stand neck is firmly connected.



Tightly fasten the connecting screw at the bottom of the stand base.



Place a soft cloth over the table to protect the product and place the product onto the cloth so that the front of the product is facing downwards.



Hold the main body of the product with your hand as shown by the figure.

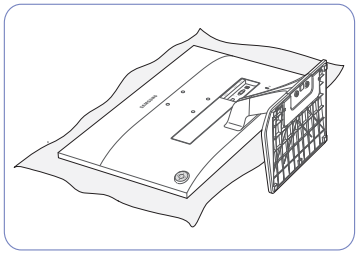
Push the assembled stand into the main body in the direction of the arrow as shown in the figure.

- Caution

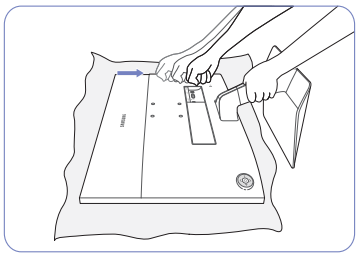
Do not hold the product upside down only by the stand.

1.3.2 Removing the Stand

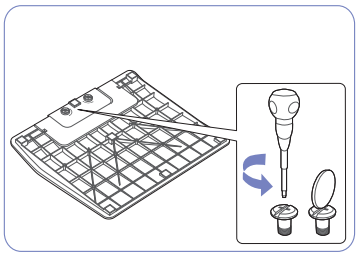
The exterior may differ depending on the product.



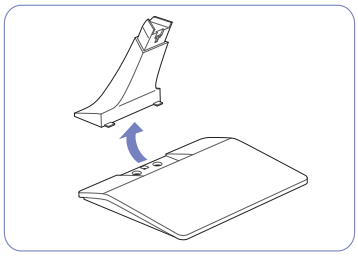
Place a soft cloth over the table to protect the product and place the product onto the cloth so that the front of the product faces downwards.



While holding the stand neck with one hand, pound the other fisted hand down onto the top of the stand base in the direction of the arrow to detach the stand base.



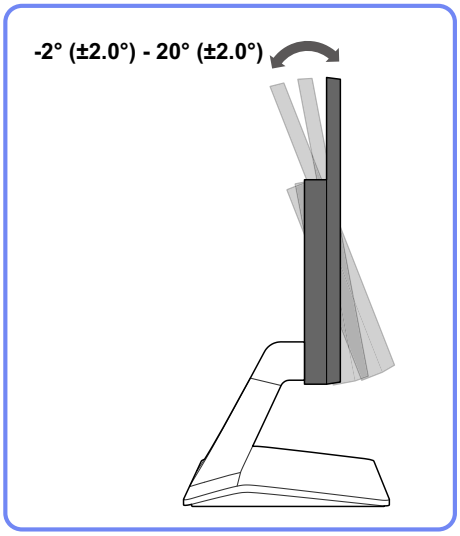
Turn the connecting screw at the bottom of the stand base to separate it.



Remove the stand neck from the stand base by pulling it in the direction of the arrow as shown in the figure.

1.3.3 Adjusting the Product Tilt

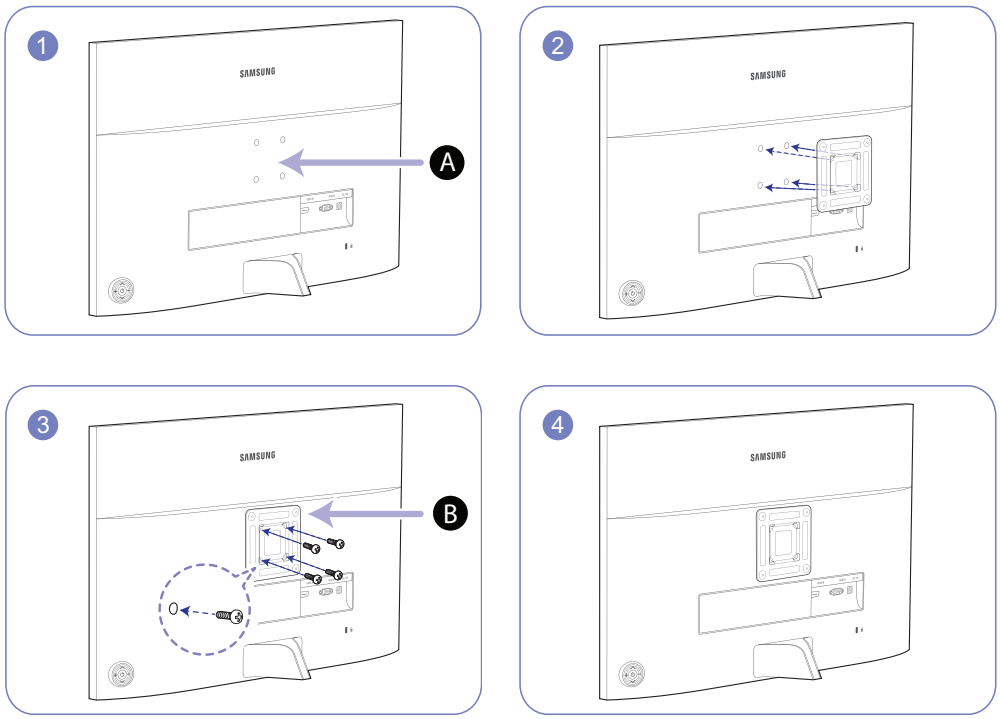
The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.



- You can adjust the tilt of your monitor.
- Hold the lower part of the product and adjust the tilt carefully.

1.3.4 Installing a Wall-mount Kit or Desktop Stand

Power the product off and remove the power cable from the power socket.



A Attach the wall-mount kit or desktop stand here

B Bracket (sold separately)

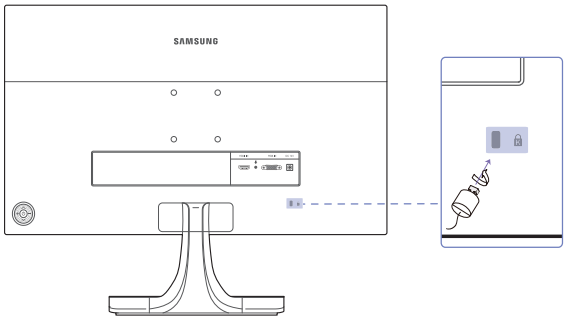
Align the grooves and tightly fasten the screws on the bracket on the product with the corresponding parts on the wall-mount kit or desktop stand you want to attach.

Notes

- Using a screw longer than the standard length can damage the internal components of the product.
- The length of screws required for a wall mount that does not comply with the VESA standards may vary depending on the specifications.
- Do not use screws that do not comply with the VESA standards. Do not attach the wall-mount kit or desktop stand using excessive force. The product may get damaged or fall and cause personal injury. Samsung shall not be held liable for any damage or injury caused by using improper screws or attaching the wall-mount kit or desktop stand using excessive force.
- Samsung shall not be held liable for any product damage or personal injury caused by using a wall-mount kit other than the one specified or from an attempt to install the wall-mount kit on your own.
- To mount the product on a wall, ensure you purchase a wall-mount kit that can be installed 10cm or farther away from the wall.
- Be sure to use a wall-mount kit that complies with the standards.
- To install the monitor using a wall mount, disconnect the stand base from the monitor.

1.3.5 Anti-theft Lock

An anti-theft lock allows you to use the product securely even in public places. The locking device shape and locking method depend on the manufacturer. Refer to the user guide provided with your anti-theft locking device for details. The lock device is sold separately.



The color and shape of parts may differ from what is shown. Specifications are subject to change without notice to improve quality.

To lock an anti-theft locking device:

1. Fix the cable of your anti-theft locking device to a heavy object such as a desk.
2. Put one end of the cable through the loop on the other end.
3. Insert the locking device into the anti-theft lock slot at the back of the product.
4. Lock the locking device.

- An anti-theft locking device can be purchased separately.
- Refer to the user guide provided with your anti-theft locking device for details.
- Anti-theft locking devices can be purchased at electronics retailers or online.

2 Connecting and Using a Source Device

2.1 Before Connecting

2.1.1 Pre-connection Checkpoints

- Before connecting a source device, read the user manual provided with it.
  The number and locations of ports on source devices may differ from device to device.
- Do not connect the power cable until all connections are completed.
  Connecting the power cable during connection may damage the product.
- Check the types of ports at the back of the product you want to connect.

2.2 Connecting and Using a PC

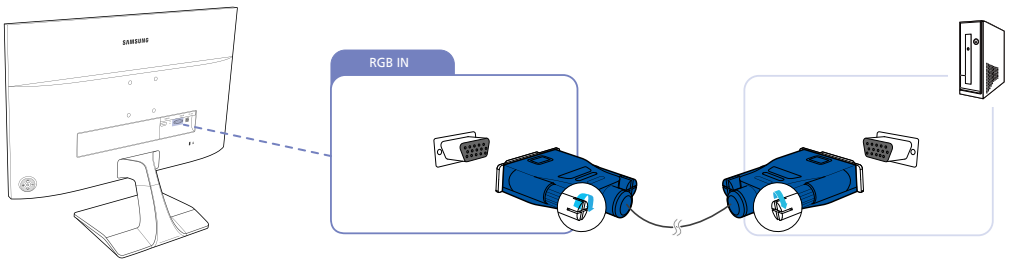
2.2.1 Connecting to a PC

- Select a connection method suitable for your PC.

- Connecting parts may differ in different products.
- The exterior may differ depending on the product.

Connection Using the D-SUB Cable (Analog Type)

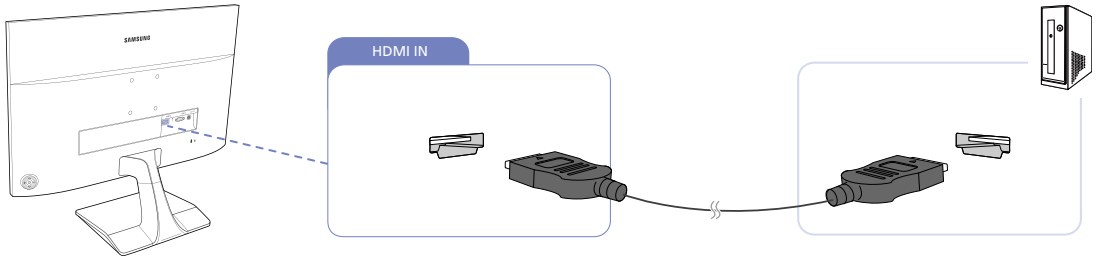
Do not connect the power cable before connecting all other cables. Ensure you connect a source device first before connecting the power cable.



1. Connect the D-SUB cable to the [RGB IN] port on the back of the product and the RGB port on the PC.
2. Connect the DC power adapter to the product and a power socket. Next, turn on the power switch on the PC. (For details, refer to "2.2.2 Connecting the Power".)
3. When the input source is not connected, use the [∧/∨] button to change the input source to Analog.

Connection Using the HDMI Cable

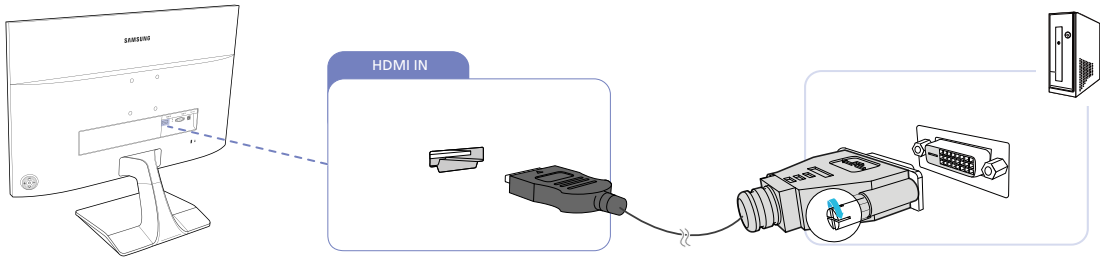
Do not connect the power cable before connecting all other cables. Ensure you connect a source device first before connecting the power cable.



1. Connect the HDMI cable to the [HDMI IN] port on the back of the product and the HDMI port on the PC.
2. Connect the DC power adapter to the product and a power socket. Next, turn on the power switch on the PC. (For details, refer to "2.2.2 Connecting the Power".)
3. When the input source is not connected, use the [∧/∨] button to change the input source to **HDMI**.

Connection Using an HDMI-DVI Cable

Do not connect the power cable before connecting all other cables. Ensure you connect a source device first before connecting the power cable.



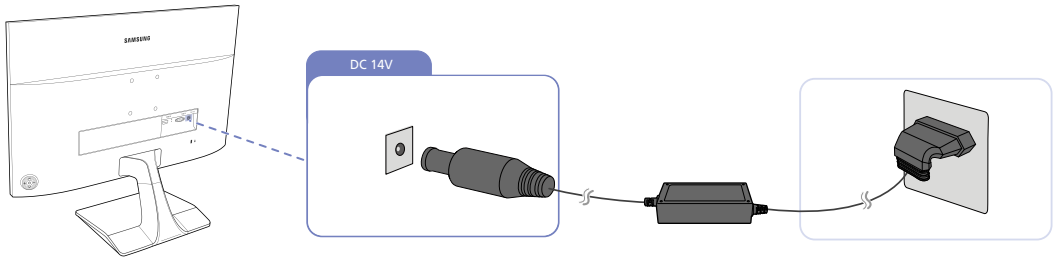
1. Connect the HDMI-DVI cable to the [HDMI IN] port on the back of the product and the DVI port on the PC.
2. Connect the DC power adapter to the product and a power socket. Next, turn on the power switch on the PC. (For details, refer to "2.2.2 Connecting the Power".)
3. When the input source is not connected, use the [∧/∨] button to change the input source to **HDMI**.

2.2.2 Connecting the Power

- Connecting parts may differ in different products.
- The exterior may differ depending on the product.

Power connection using integrated DC power adapter

- Connect the DC power adapter to [DC 14V] port on the back of the product and to the power outlet.



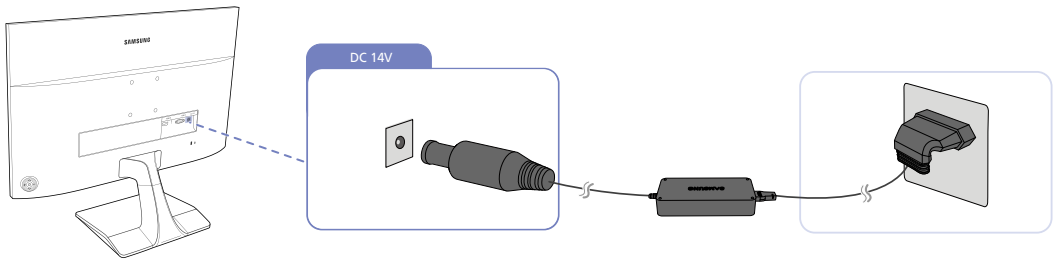
The input voltage is switched automatically.

Power connection using detachable DC power adapter

- Connect the power cable to the DC power adapter.

  Then, connect the DC power adapter to the [DC 14V] port on the back of the product.

  Next, connect the power cable to the power outlet.



The input voltage is switched automatically.

2.2.3 Driver Installation

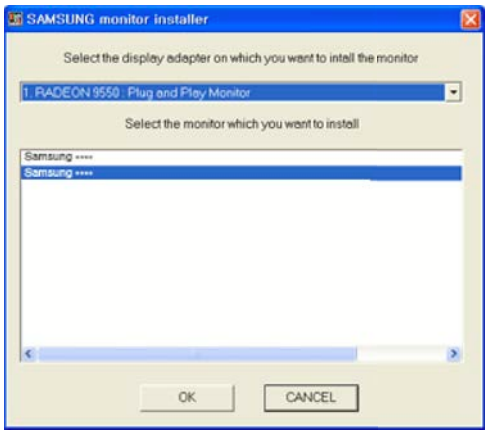
- You can set the optimum resolution and frequency for this product by installing the corresponding drivers.
- An installation driver is contained on the CD supplied with the product.
- If the file provided is faulty, visit the Samsung homepage (http://www.samsung.com/) and download the file.

1 Insert the user manual CD provided with the product into the CD-ROM drive.

2 Click "Windows Driver".

3 Follow the instructions given on the screen to proceed with installation.

4 Select your product model from the list of models.



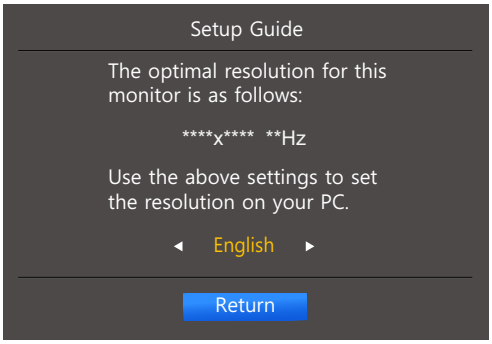
5 Go to Display Properties and check that the resolution and refresh rate are appropriate.

Refer to your Windows OS manual for further details.

2.2.4 Setting Optimum Resolution

An information message about setting optimum resolution will appear if you power on the product for the first time after purchase.

Select a language on the product and change the resolution on your PC to the optimum setting.



1 Select a language by pressing the [—/+] button. Next, press the [⏻] button.

2 To hide the information message, press the [⏻] button.

- If the optimum resolution is not selected, the message will appear up to three times for a specified time even when the product is turned off and on again.
- The optimum resolution can also be selected in **Control Panel** on your PC.

3 Screen Setup

Configure the screen settings such as brightness.

A detailed description of each function is provided. Refer to your product for details.

3.1 Brightness

You can adjust the general brightness of the picture. (Range: 0~100)

A higher value will make the picture appear brighter.

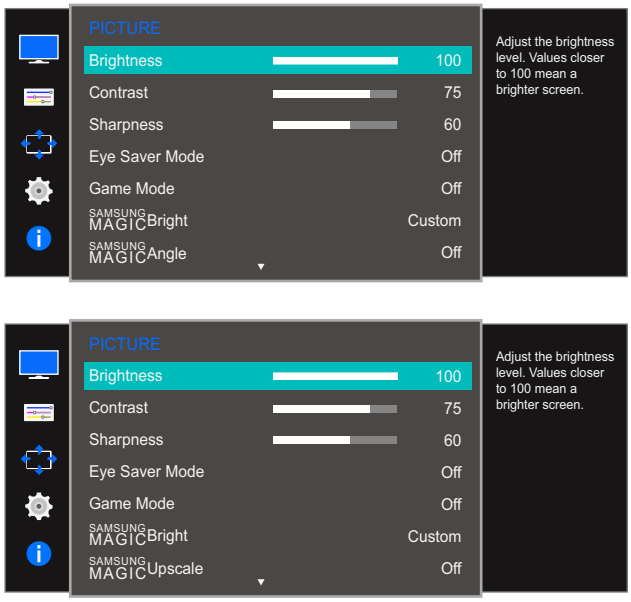
- This menu is not available when SAMSUNG MAGIC**Bright** is set to **Dynamic Contrast** mode.
- This menu is not available when **Eco Saving Plus** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

3.1.1 Configuring Brightness

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **Brightness** and press [⏻] button on the monitor.

   The following screen will appear.



4. Use the [—/+] buttons to adjust the **Brightness**, then press the [⏻] button on the monitor.
5. The selected option will be applied.

3.2 Contrast

Adjust the contrast between the objects and background. (Range: 0~100)

A higher value will increase the contrast to make the object appear clearer.

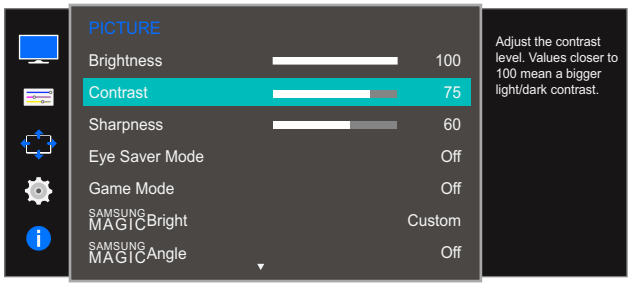
- This option is not available when SAMSUNG MAGIC**Bright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

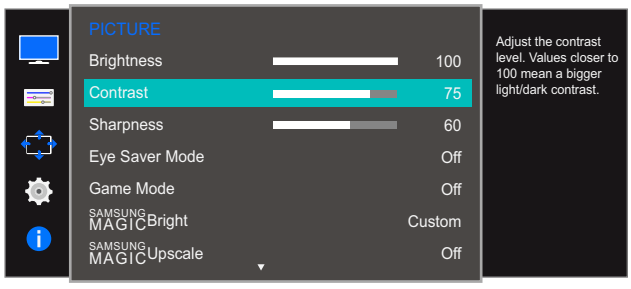
3.2.1 Configuring Contrast

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **Contrast** and press [⏻] button on the monitor.

   The following screen will appear.





4. Use the [—/+] buttons to adjust the **Contrast**, then press the [⏻] button on the monitor.
5. The selected option will be applied.

3.3 Sharpness

Make the outline of objects more clear or blurry. (Range: 0~100)

A higher value will make the outline of objects clearer.

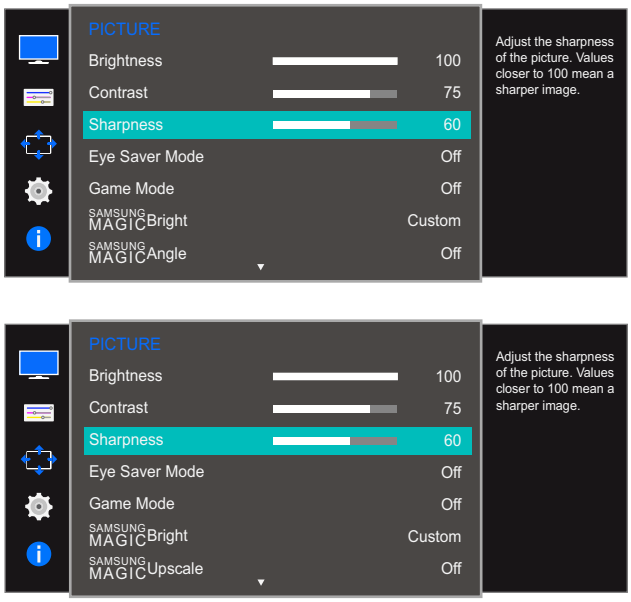
- This option is not available when SAMSUNG MAGIC**Bright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when SAMSUNG MAGIC**Upscale** is in **Mode1** or **Mode2**.
- This menu is not available when **Game Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

3.3.1 Configuring Sharpness

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **Sharpness** and press [⏻] button on the monitor.

   The following screen will appear.



4. Use the [−/+] buttons to adjust the **Sharpness**, then press the [⏻] button on the monitor.
5. The selected option will be applied.

3.4 Eye Saver Mode

Set to an optimum picture quality suitable for eye relaxation.

TÜV Rheinland “Low Blue Light Content” is a certification for products which meet requirements for lower blue light levels. When **Eye Saver Mode** is '**On**', the blue light that wavelength is around 400nm will become lower and lower, and one hour later it will approach the optimum picture quality suitable for eye relaxation. At the same time, the blue light level is lower than in the default settings, and it was tested by TÜV Rheinland and certified as it met the requirements of TÜV Rheinland “Low Blue Light Content” standards.

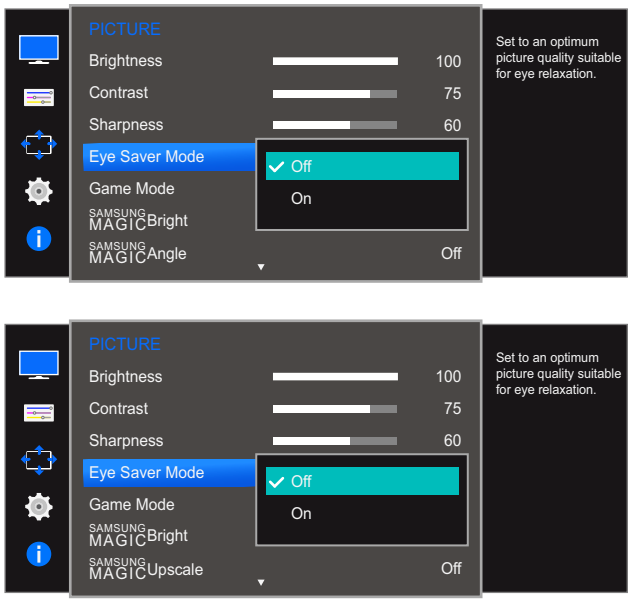
The functions available on the monitor may vary depending on the model. Refer to the actual product.

3.4.1 Configuring Eye Saver Mode

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **Eye Saver Mode** and press [⏻] button on the monitor.

   The following screen will appear.



4. Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.
5. The selected option will be applied.

3.5 Game Mode

Configure the product screen settings for game mode.
Use this feature when playing games on a PC or when a game console such as PlayStation™ or Xbox™ is connected.

- This menu is not available when **Eye Saver Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

3.5.1 Configuring Game Mode

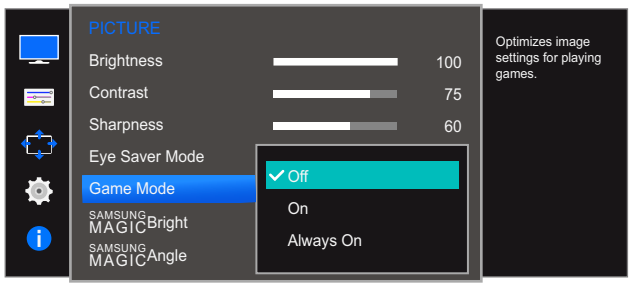
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

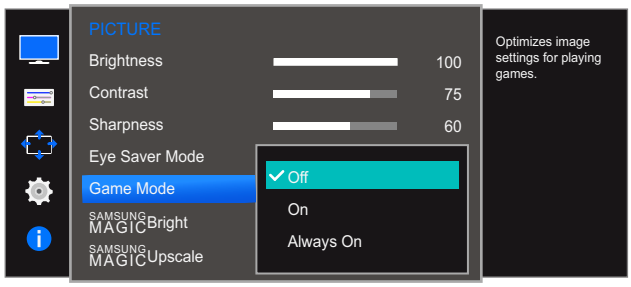
Next, press the [⏻] button.

2 Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Game Mode** and press [⏻] button on the monitor.

The following screen will appear.





4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

- When the monitor turns off, enters power-saving mode or changes input sources, **Game Mode** turns **Off** even if it is set to **On**.
- If you want to keep **Game Mode** enabled all the time, select **Always On**.

3.6 SAMSUNG MAGIC Bright

This menu provides an optimum picture quality suitable for the environment where the product will be used.

- This menu is not available when **Eco Saving Plus** is enabled.
- This menu is not available when **Game Mode** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

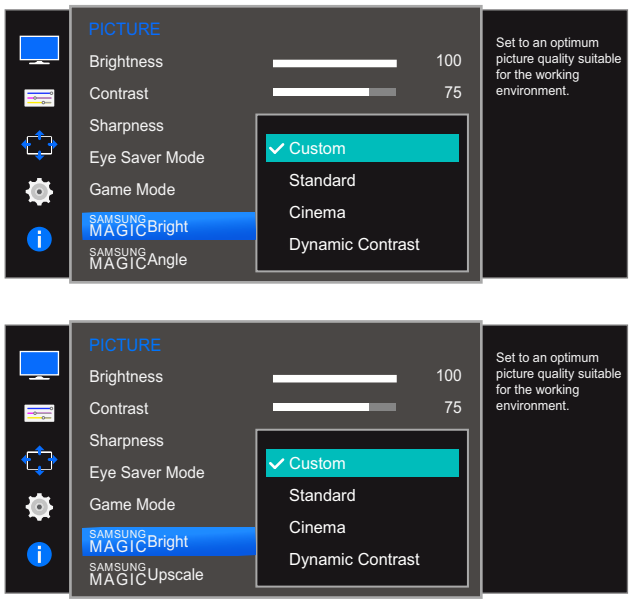
You can customize the brightness to suit your preferences.

3.6.1 Configuring SAMSUNG MAGIC Bright

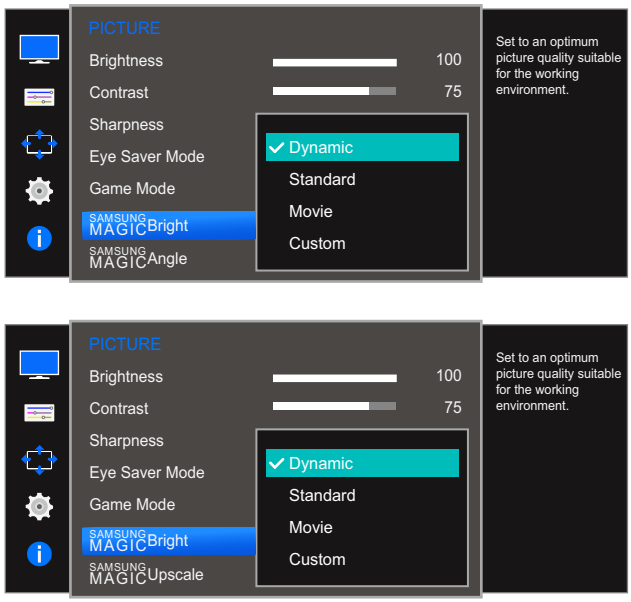
1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **SAMSUNG MAGIC Bright** and press [⏻] button on the monitor.

   The following screen will appear.



- **Custom**: Customize the contrast and brightness as required.
- **Standard**: Obtain a picture quality suitable for editing documents or using Internet.
- **Cinema**: Obtain the brightness and sharpness of TVs suitable for enjoying video and DVD content.
- **Dynamic Contrast**: Obtain balanced brightness through automatic contrast adjustment.



When the external input is connected through HDMI and **PC/AV Mode** is set to **AV**, **SAMSUNG MAGICBright** has four automatic picture settings (**Dynamic**, **Standard**, **Movie** and **Custom**) that are preset at the factory. You can activate either **Dynamic**, **Standard**, **Movie** or **Custom**. You can select **Custom** which automatically recalls your personalized picture settings.

- **Dynamic**: Select this mode to view a sharper image than in **Standard** mode.
- **Standard**: Select this mode when the surroundings are bright. This also provides a sharp image.
- **Movie**: Select this mode when the surroundings are dark. This will save power and reduce eye fatigue.
- **Custom**: Select this mode when you want to adjust the image according to your preferences.

4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

3.7 SAMSUNG MAGIC Angle (S19E310HY / S22E310HY / S22E310H / S27E310H)

SAMSUNG MAGIC**Angle** allows you to configure the settings to obtain the optimum picture quality according to your viewing angle.

- This option is not available when SAMSUNG MAGIC**Bright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** or **Eye Saver Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

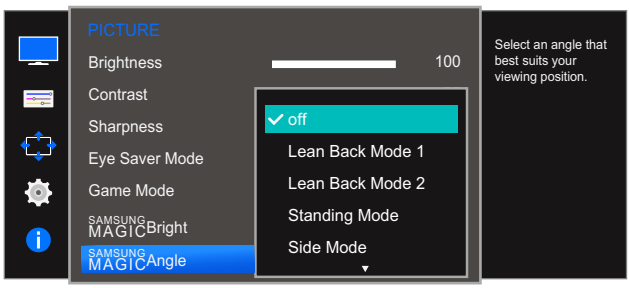
This feature provides the viewing angle, brightness, and tint to suit your preferences.

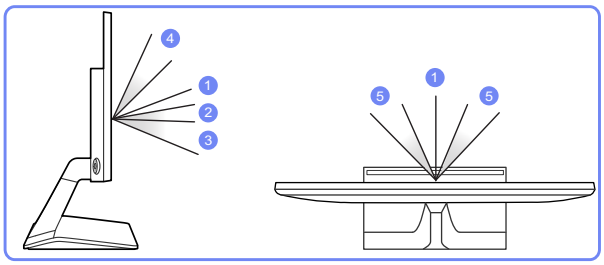
3.7.1 Configuring SAMSUNG MAGIC Angle

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to SAMSUNG MAGIC**Angle** and press [⏻] button on the monitor.

   The following screen will appear.





- **Off** ①: Select this option to view directly in front of the product.
- **Lean Back Mode 1** ②: Select this option to view from a place slightly lower than the product.
- **Lean Back Mode 2** ③: Select this option to view from a place lower than Lean Back Mode 1.
- **Standing Mode** ④: Select this option to view from a place higher than the product.
- **Side Mode** ⑤: Select this option to view from either side of the product.

- **Group View**: Select this option for more than one viewer to view from places ①, ④ and ⑤.
- **Custom**: **Lean Back Mode 1** will be applied by default if **Custom** is selected.

4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

3.8 SAMSUNG MAGIC Upscale

SAMSUNG MAGIC**Upscale** function can enhance the layers of the picture details and the vividness of the picture.

- The function has more obvious effects on low-resolution pictures.
- This menu is not available when SAMSUNG MAGIC**Bright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

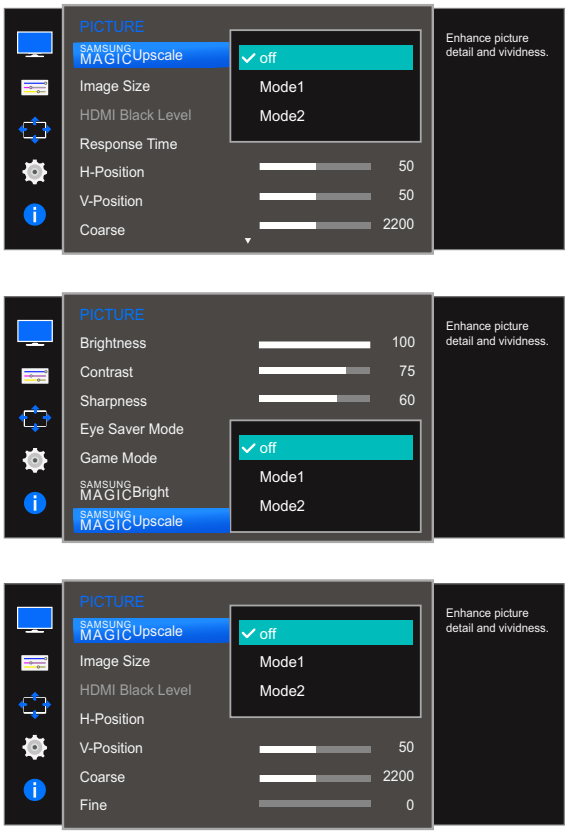
3.8.1 Configuring SAMSUNG MAGIC Upscale

1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to SAMSUNG MAGIC**Upscale** and press [⏻] button on the monitor.
The following screen will appear.



Comparing with **Mode1**, **Mode2** has a stronger effect.

4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

3.9 Image Size

Change the picture size.

The functions available on the monitor may vary depending on the model. Refer to the actual product.

3.9.1 Changing the Image Size

1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

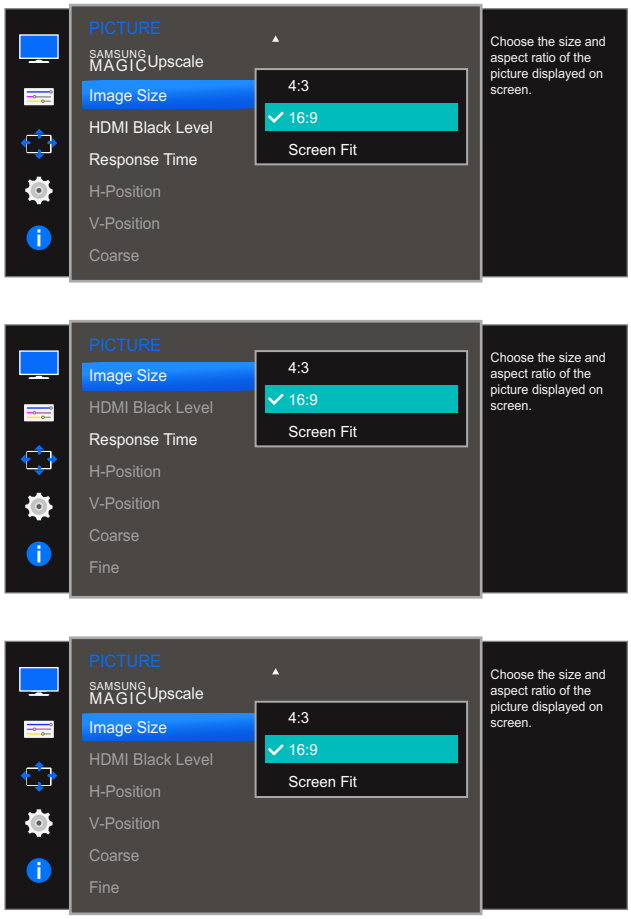
2 Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Image Size** and press [⏻] button on the monitor.
The following screen will appear.

In **PC** mode

- **Auto**: Display the picture according to the aspect ratio of the input source.
- **Wide**: Display the picture in full screen regardless of the aspect ratio of the input source.

In AV mode



- **4:3**: Display the picture with an aspect ratio of 4:3. Suitable for videos and standard broadcasts.
- **16:9**: Display the picture with an aspect ratio of 16:9.
- **Screen Fit**: Display the picture with the original aspect ratio without cutting off.

- Changing the screen size is available when the following conditions are satisfied.
- The function may not be supported depending on the ports provided with the product.
  - A digital output device is connected using the HDMI cable.
  - The input signal is 480p, 576p, 720p, or 1080p and monitor can display normally (Not every model can support all of these signals.).
  - This can only be set when the external input is connected through HDMI and PC/AV Mode is set to AV.

4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

3.10 HDMI Black Level

If a DVD player or set-top box is connected to the product via HDMI, image quality degradation (contrast/color degradation, black level, etc.) may occur, depending on the connected source device. In such case, **HDMI Black Level** can be used to adjust the image quality. If this is the case, correct the degraded picture quality using **HDMI Black Level**.

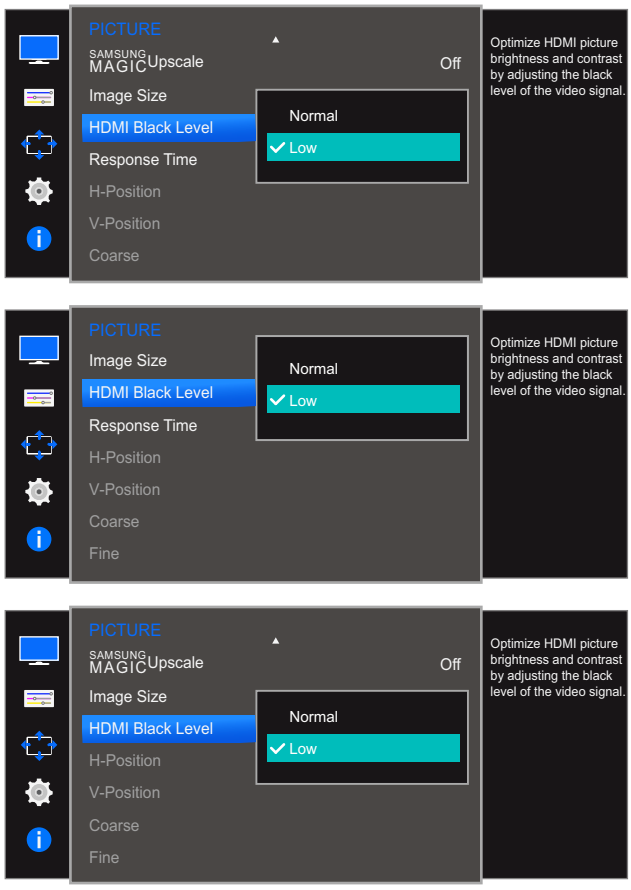
- This function is only available in **HDMI** mode.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

3.10.1 Configuring the HDMI Black Level Settings

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.

2. Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **HDMI Black Level** and press [⏻] button on the monitor. The following screen will appear.



- **Normal**: Select this mode when there is no contrast ratio degradation.
- **Low**: Select this mode to reduce the black level and increase the white level when there is a contrast ratio degradation.

4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

HDMI Black Level may not be compatible with some source devices.

3.11 Response Time (S24E310HL / S27E310H)

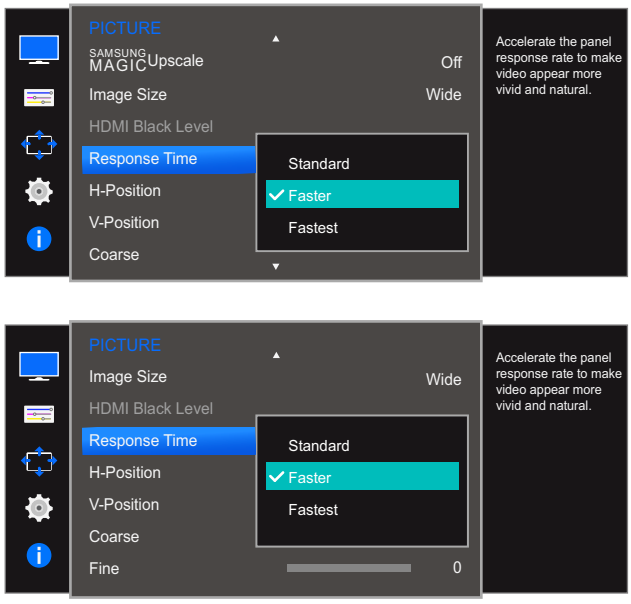
Accelerate the panel response rate to make video appear more vivid and natural.

- It is best to set **Response Time** to **Standard** or **Faster** when you are not viewing a movie.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

3.11.1 Configuring the Response Time

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **Response Time** and press [⏻] button on the monitor.
   The following screen will appear.



4. Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.
5. The selected option will be applied.

3.12 H-Position & V-Position

H-Position: Move the screen to the left or right.

V-Position: Move the screen up or down.

- This menu is available in **Analog** mode only.
- This menu is only available when **Image Size** is set to **Screen Fit** in **AV** Mode. When a 480P or 576P or 720P or 1080P signal is input in **AV** mode and the monitor can display normally, select **Screen Fit** to adjust horizontal position in 0-6 levels.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

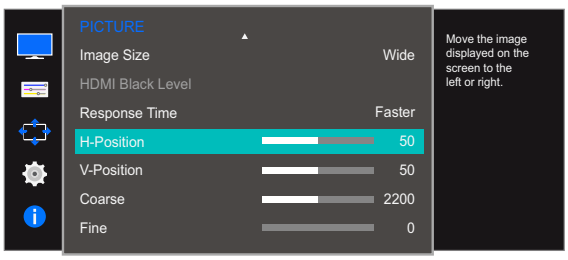
3.12.1 Configuring H-Position & V-Position

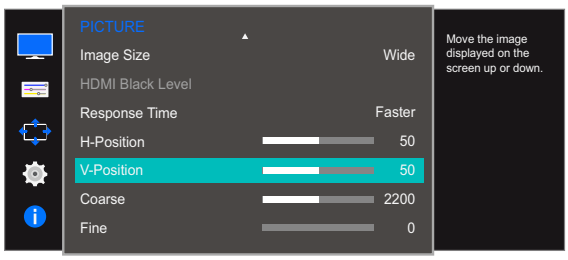
1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

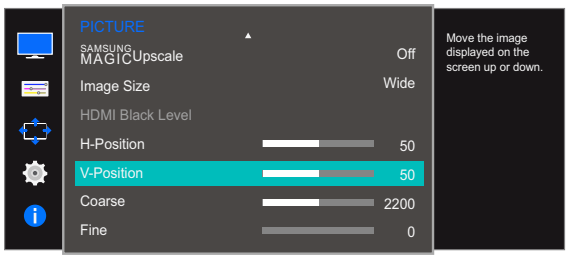
   Next, press the [⏻] button.

2. Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **H-Position** or **V-Position** and press [⏻] button on the monitor.

   The following screen will appear.







4 Use the [—/+] buttons to adjust the **H-Position** or **V-Position**, then press the [⏻] button on the monitor.

5 The selected option will be applied.

3.13 Coarse

Adjust the screen frequency.

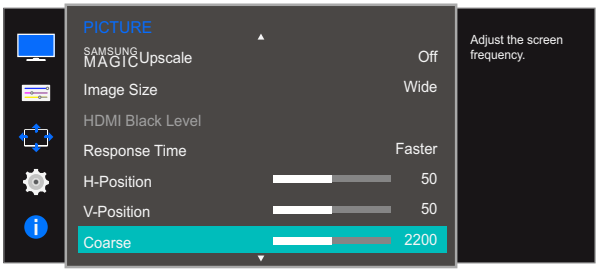
- This menu is available in **Analog** mode only.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

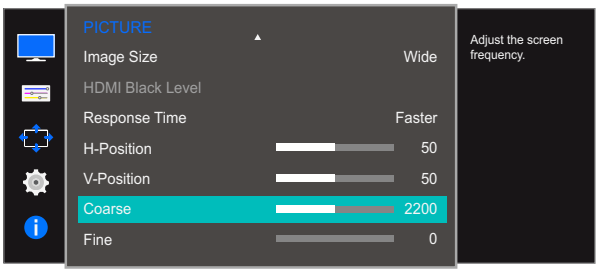
3.13.1 Adjusting Coarse

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **Coarse** and press [⏻] button on the monitor.

   The following screen will appear.





4. Use the [—/+] buttons to adjust the **Coarse**, then press the [⏻] button on the monitor.
5. The selected option will be applied.

3.14 Fine

Fine-adjust the screen to obtain a vivid picture.

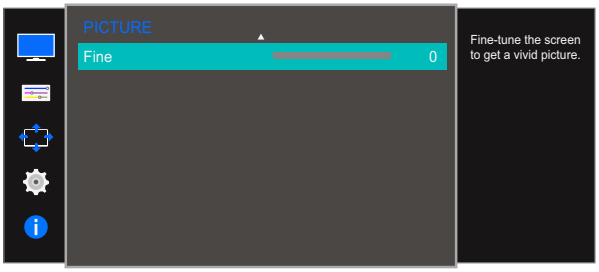
- This menu is available in **Analog** mode only.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

3.14.1 Adjusting Fine

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **PICTURE** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **Fine** and press [⏻] button on the monitor.

   The following screen will appear.



4. Use the [—/+] buttons to adjust the **Fine**, then press the [⏻] button on the monitor.
5. The selected option will be applied.

4 Configuring Tint

A detailed description of each function is provided. Refer to your product for details.

Adjust the tint of the screen. This menu is not available when SAMSUNG MAGIC Bright is set to Cinema or Dynamic Contrast mode. This menu is not available when Game Mode or Eye Saver Mode is enabled.

4.1 Red

Adjust the value of the color red in the picture. (Range: 0~100)

A higher value will increase the intensity of the color.

4.1.1 Configuring Red

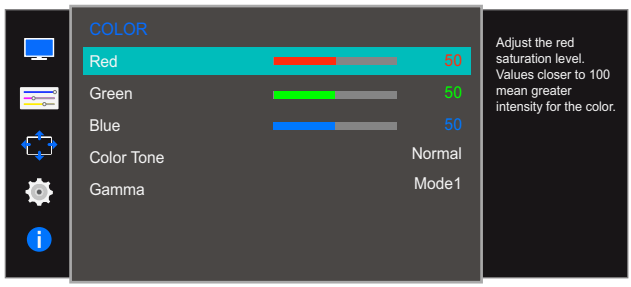
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to COLOR and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to Red and press [⏻] button on the monitor.

The following screen will appear.



4 Use the [—/+] buttons to adjust the Red, then press the [⏻] button on the monitor.

5 The selected option will be applied.

4.2 Green

Adjust the value of the color green in the picture. (Range: 0~100)

A higher value will increase the intensity of the color.

4.2.1 Configuring Green

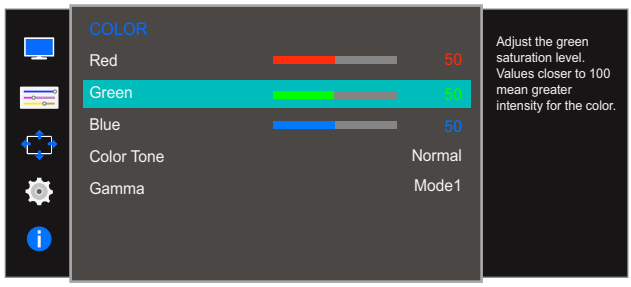
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **COLOR** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Green** and press [⏻] button on the monitor.

The following screen will appear.



4 Use the [—/+] buttons to adjust the **Green**, then press the [⏻] button on the monitor.

5 The selected option will be applied.

4.3 Blue

Adjust the value of the color blue in the picture. (Range: 0~100)

A higher value will increase the intensity of the color.

4.3.1 Configuring Blue

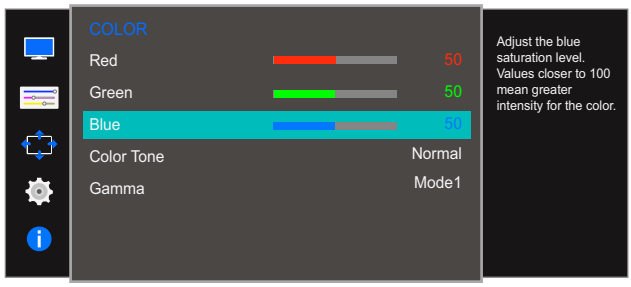
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **COLOR** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Blue** and press [⏻] button on the monitor.

The following screen will appear.



4 Use the [—/+] buttons to adjust the **Blue**, then press the [⏻] button on the monitor.

5 The selected option will be applied.

4.4 Color Tone

Adjust the general color tone of the picture.

4.4.1 Configuring the Color Tone Settings

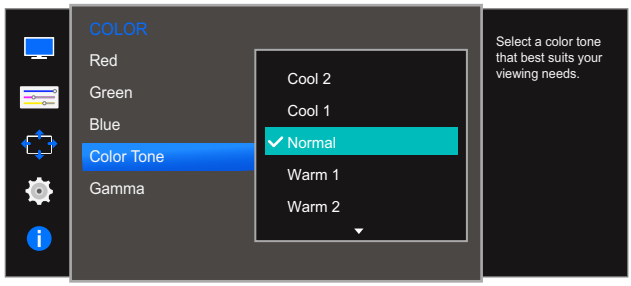
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **COLOR** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Color Tone** and press [⏻] button on the monitor.

The following screen will appear.



- **Cool 2**: Set the color temperature to be cooler than **Cool 1**.
- **Cool 1**: Set the color temperature to be cooler than **Normal** mode.
- **Normal**: Display the standard color tone.
- **Warm 1**: Set the color temperature to be warmer than **Normal** mode.
- **Warm 2**: Set the color temperature to be warmer than **Warm 1**.
- **Custom**: Customize the color tone.

When the external input is connected through HDMI and **PC/AV Mode** is set to **AV**, **Color Tone** has four color temperature settings (**Cool**, **Normal**, **Warm** and **Custom**).

4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

4.5 Gamma

Adjust the mid-range brightness (Gamma) of the picture.

4.5.1 Configuring Gamma

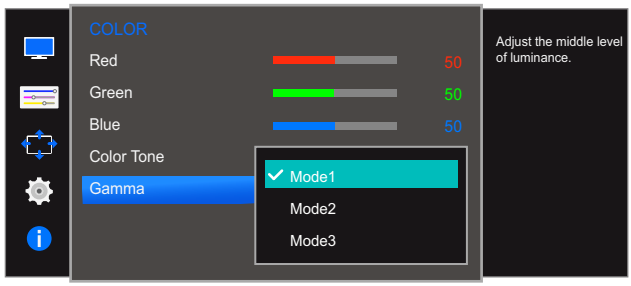
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **COLOR** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Gamma** and press [⏻] button on the monitor.

The following screen will appear.



4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

5 Coordinating OSD

A detailed description of each function is provided. Refer to your product for details.

5.1 Language

Set the menu language.

- A change to the language setting will only be applied to the onscreen menu display.
- It will not be applied to other functions on your PC.

5.1.1 Configuring Language

1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **MENU SETTINGS** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Language** and press [⏻] button on the monitor.

The following screen will appear.

4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

5.2 Menu H-Position & Menu V-Position

Menu H-Position: Move the menu position to the left or right.

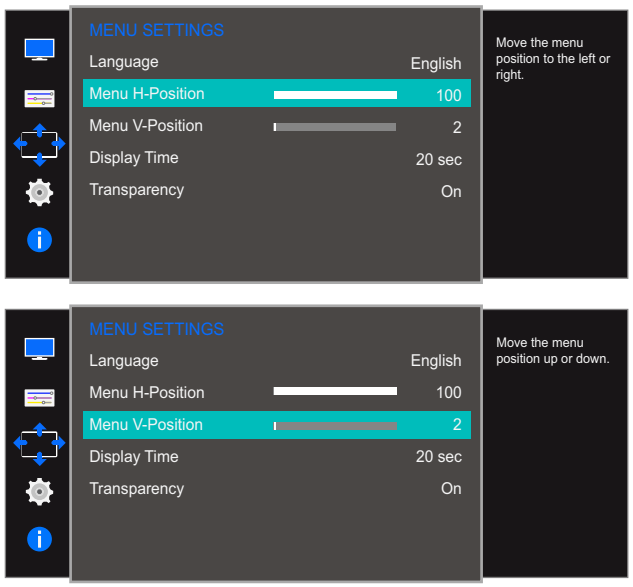
Menu V-Position: Move the menu position up or down.

5.2.1 Configuring Menu H-Position & Menu V-Position

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.

2. Press [∧/∨] button to move to **MENU SETTINGS** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **Menu H-Position** or **Menu V-Position** and press [⏻] button on the monitor.
   The following screen will appear.



4. Use the [—/+] buttons to adjust the **Menu H-Position** or **Menu V-Position**, then press the [⏻] button on the monitor.
5. The selected option will be applied.

5.3 Display Time

Set the on-screen display (OSD) menu to automatically disappear if the menu is not used for a specified period of time.

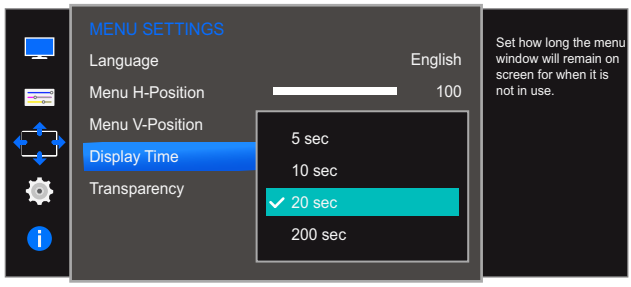
Display Time can be used to specify the time after which you want the OSD menu to disappear.

5.3.1 Configuring Display Time

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **MENU SETTINGS** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **Display Time** and press [⏻] button on the monitor.

   The following screen will appear.



4. Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.
5. The selected option will be applied.

5.4 Transparency

Set the transparency for the menu windows.

5.4.1 Changing Transparency

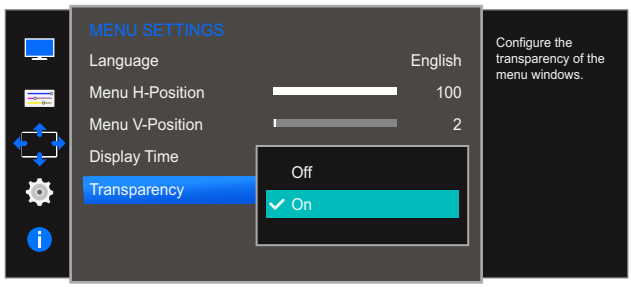
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **MENU SETTINGS** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Transparency** and press [⏻] button on the monitor.

The following screen will appear.



4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

6 Setup and Reset

A detailed description of each function is provided. Refer to your product for details.

6.1 Reset All

Return all the settings for the product to the default factory settings.

The functions available on the monitor may vary depending on the model. Refer to the actual product.

6.1.1 Initializing Settings (Reset All)

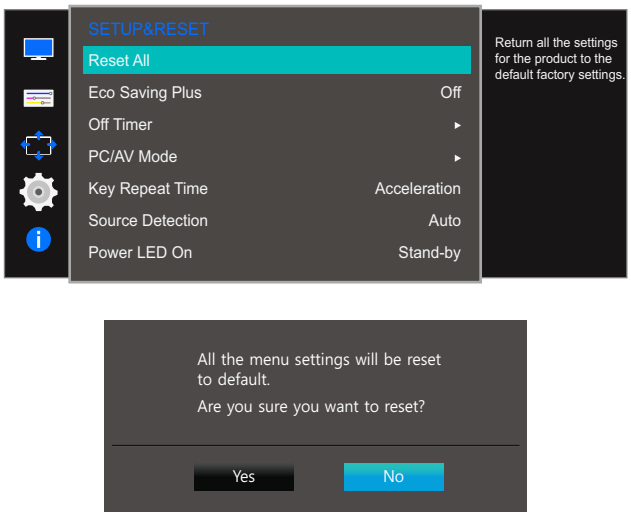
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **SETUP&RESET** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Reset All** and press [⏻] button on the monitor.

The following screen will appear.



4 Move the focus to the desired option by pressing [—/+] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

6.2 Eco Saving Plus

The **Eco Saving Plus** function reduces power consumption by controlling the electric current used by the monitor panel.

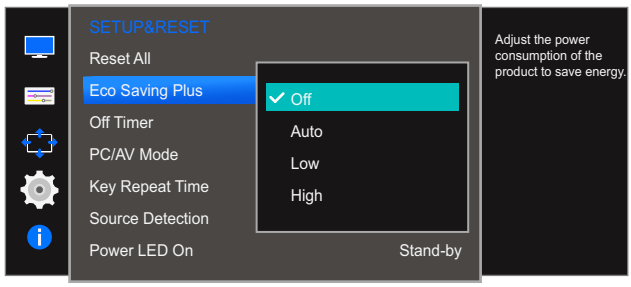
- This menu is not available when SAMSUNG MAGIC**Bright** is in **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

6.2.1 Configuring Eco Saving Plus

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **SETUP&RESET** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **Eco Saving Plus** and press [⏻] button on the monitor.

   The following screen will appear.



- **Off**: Deactivate the **Eco Saving Plus** function.
- **Auto**: The power consumption will automatically be reduced by about 10% over the current setting.

  (The reduction of power consumption depends on the customer screen brightness condition.)
- **Low**: The power consumption will be reduced by 25% over the default setting.
- **High**: The power consumption will be reduced by 50% over the default setting.

4. Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.
5. The selected option will be applied.

6.3 Off Timer

You can set the product to automatically turn off.

The functions available on the monitor may vary depending on the model. Refer to the actual product.

6.3.1 Configuring Off Timer

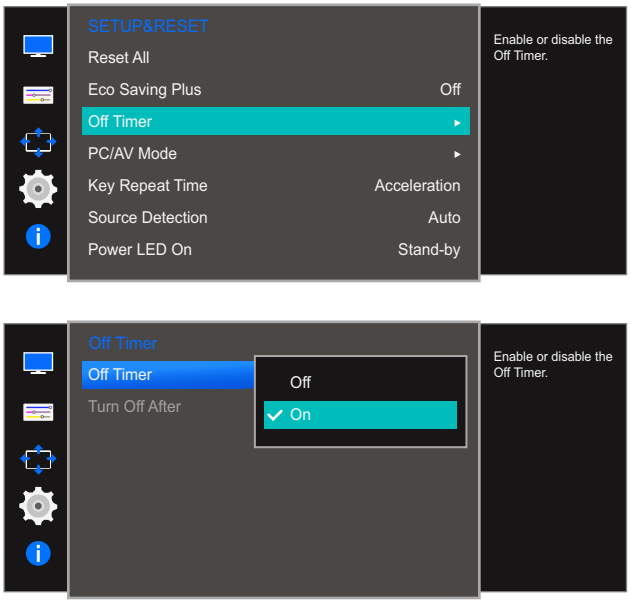
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **SETUP&RESET** and press [⏻] button on the monitor.

3 Use the [∧/∨] button to move to **Off Timer**, then press the [⏻] button on the monitor twice.

The following screen will appear.



- **Off**: Deactivate the off timer so that the product does not power off automatically.
- **On**: Activate the off timer so that the product powers off automatically.

4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

6.3.2 Configuring Turn Off After

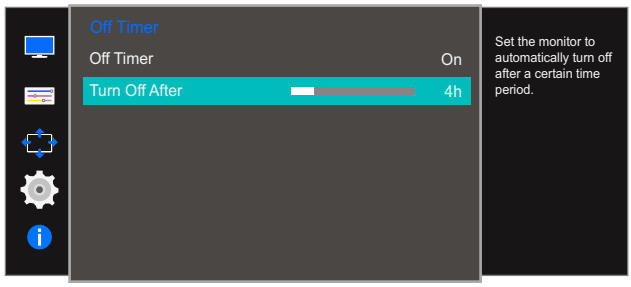
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **SETUP&RESET** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Off Timer** and press [⏻] button on the monitor.

4 Press [∧/∨] button to move to **Turn Off After** and press [⏻] button on the monitor.
The following screen will appear.



5 Use the [—/+] buttons to adjust the **Turn Off After**, then press the [⏻] button on the monitor.

6 The selected option will be applied.

- The off timer can be set within a range of 1 to 23 hours. The product will automatically power off after the specified number of hours.
- This option is only available when **Off Timer** is set to **On**.
- For products for the market in some regions, the **Off Timer** is set to automatically activate 4 hours after the product powers on. This is done in accordance with power supply regulations. If you do not want the timer to activate, go to **MENU** → **SETUP&RESET** and set **Off Timer** to **Off**.

6.4 PC/AV Mode

Set **PC/AV Mode** to **AV**. The picture size will be enlarged. This option is useful when you view a movie.

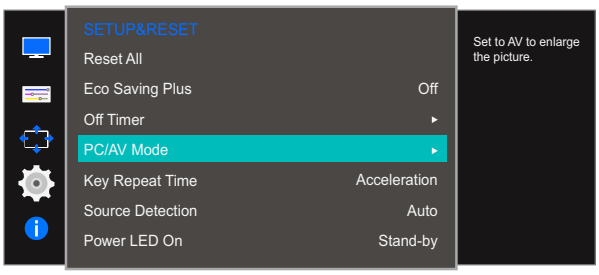
- This function does not support **Analog** mode.
- Supplied for the wide models only such as 16:9 or 16:10.
- If the monitor (when set to HDMI) is in power saving mode or is displaying the message **Check Signal Cable**, press the MENU button to display the On Screen Display(OSD). You can select **PC** or **AV**.
- The functions available on the monitor may vary depending on the model. Refer to the actual product.

6.4.1 Configuring PC/AV Mode

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **SETUP&RESET** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **PC/AV Mode** and press [⏻] button on the monitor.
4. Press [∧/∨] button to move to **HDMI** and press [⏻] button on the monitor.

   The following screen will appear.



5. Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.
6. The selected option will be applied.

6.5 Key Repeat Time

Control the response rate of a button when the button is pressed.

The functions available on the monitor may vary depending on the model. Refer to the actual product.

6.5.1 Configuring Key Repeat Time

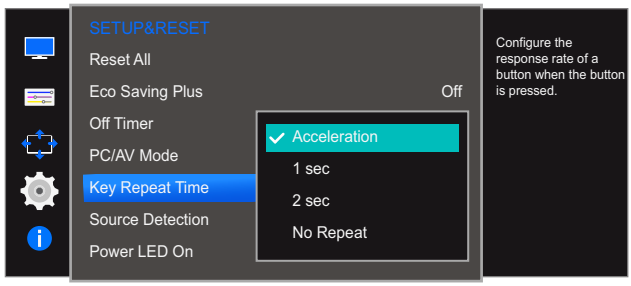
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **SETUP&RESET** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Key Repeat Time** and press [⏻] button on the monitor.

The following screen will appear.



- **Acceleration**, **1 sec**, or **2 sec** can be selected. If **No Repeat** is selected, a command responds only once when a button is pressed.

4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

6.6 Source Detection

You can activate **Source Detection**.

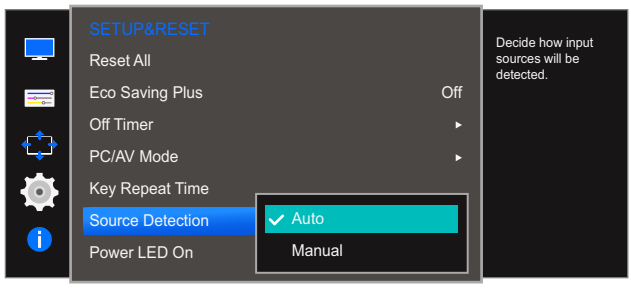
The functions available on the monitor may vary depending on the model. Refer to the actual product.

6.6.1 Configuring Source Detection

1. When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

   Next, press the [⏻] button.
2. Press [∧/∨] button to move to **SETUP&RESET** and press [⏻] button on the monitor.
3. Press [∧/∨] button to move to **Source Detection** and press [⏻] button on the monitor.

   The following screen will appear.



- **Auto**: The input source is automatically recognized.
- **Manual**: Manually select an input source.

4. Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.
5. The selected option will be applied.

6.7 Power LED On

Configure the settings to enable or disable the power LED located at the lower part of the product.

The functions available on the monitor may vary depending on the model. Refer to the actual product.

6.7.1 Configuring Power LED On

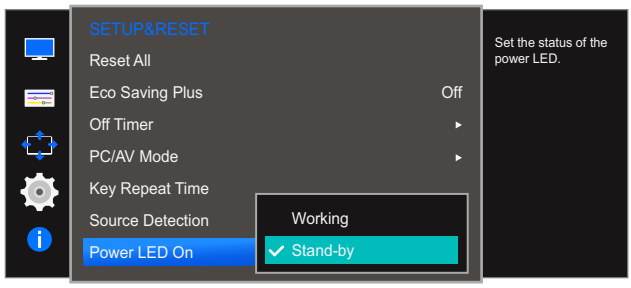
1 When the Function Key Guide appears, select [▥] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **SETUP&RESET** and press [⏻] button on the monitor.

3 Press [∧/∨] button to move to **Power LED On** and press [⏻] button on the monitor.

The following screen will appear.



- **Working**: The power LED is on when the product is turned on.
- **Stand-by**: The power LED is on when the product is turned off.

4 Move the focus to the desired option by pressing [∧/∨] button on the DOME Type JOG Button. Press [⏻] button.

5 The selected option will be applied.

7 INFORMATION Menu and Others

A detailed description of each function is provided. Refer to your product for details.

7.1 INFORMATION

View the current input source, frequency and resolution.

The functions available on the monitor may vary depending on the model. Refer to the actual product.

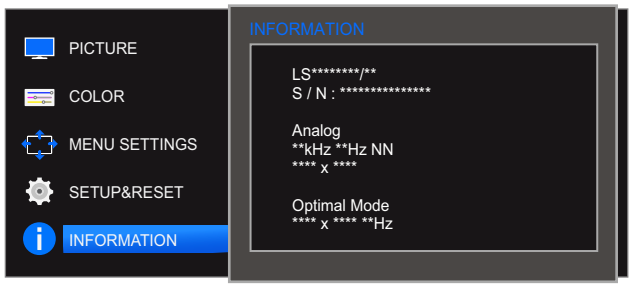
7.1.1 Displaying INFORMATION

1 When the Function Key Guide appears, select [▭] by pressing [∧] button on the DOME Type JOG Button.

Next, press the [⏻] button.

2 Press [∧/∨] button to move to **INFORMATION** and press [⏻] button on the monitor.

The following screen will appear.



The displayed menu items may vary depending on the model.

7.2 Configuring Brightness, Contrast and Sharpness from the Initial Screen

When the shortcut button page is displayed, adjust the **Brightness**, **Contrast** and **Sharpness** settings from the initial screen using the DOME Type JOG Button.

Brightness :

- This menu is not available when SAMSUNG MAGIC**Bright** is set to **Dynamic Contrast** mode.
- This menu is not available when **Eco Saving Plus** is enabled.
- This menu is not available when **Eye Saver Mode** is enabled.

Contrast :

- This option is not available when SAMSUNG MAGIC**Bright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.

Sharpness :

- This option is not available when SAMSUNG MAGIC**Bright** is in **Cinema** or **Dynamic Contrast** mode.
- This menu is not available when **Game Mode** is enabled.

1 Using the [−/+] button displays the following screen.

2 Use the [∧/∨] button to navigate to **Brightness** → **Contrast** → **Sharpness**.

3 Use the [−/+] button to adjust the **Brightness**, **Contrast** or **Sharpness**.

8.1 Easy Setting Box

"Easy Setting Box" enables users to use the monitor by partitioning multiple sections.

8.1.1 Installing the Software

1. Insert the installation CD into the CD-ROM drive.
2. Select the "Easy Setting Box" setup program.

   If the pop-up screen for the software installation does not appear on the main screen, find and double-click the "Easy Setting Box" setup file on the CD-ROM.

3. When the Installation Wizard appears, click **Next**.
4. Follow the instructions given on the screen to proceed with installation.

   - The software may not work properly if you do not restart the computer after the installation.
   - The "Easy Setting Box" icon may not appear depending on the computer system and the product specifications.
   - If the shortcut icon does not appear, press the F5 key.

Restrictions and Problems with the Installation ("Easy Setting Box")

The "Easy Setting Box" installation may be affected by the Graphics Card, Motherboard and the Networking Environment.

System Requirements

OS

- Windows XP 32Bit/64Bit
- Windows Vista 32Bit/64Bit
- Windows 7 32Bit/64Bit
- Windows 8 32Bit/64Bit

Hardware

- At least 32MB of memory
- At least 60MB of free space on the hard disk drive

8.1.2 Removing the Software

Click **Start**, select **Settings**/**Control Panel**, and then double-click **Add or Remove Programs**.

Select "Easy Setting Box" from the program list and click the **Add/Delete** button.

9.1 Requirements Before Contacting Samsung Customer Service Center

9.1.1 Testing the Product

Before calling Samsung Customer Service Center, test your product as follows. If the problem persists, contact Samsung Customer Service Center.

Check if your product is operating normally by using the product test function.

If the screen is turned off and the power indicator blinks even though the product is properly connected to a PC, perform a self-diagnosis test.

1. Power off both the PC and product.
2. Disconnect the cables from the product.
3. Power on the product.
4. If the message **Check Signal Cable** appears, the product is working normally.

   If the screen remains blank, check the PC system, video controller and cable.

9.1.2 Checking the Resolution and Frequency

For a mode that exceeds the supported resolution (refer to "10.6 Standard Signal Mode Table"), the message **Not Optimum Mode** will appear for a short time.

9.1.3 Check the following.

Installation issue (PC mode)

Issues	Solutions
The screen keeps switching on and off.	Check the cable connection between the product and PC, and ensure the connectors are locked. (Refer to "2.2 Connecting and Using a PC")

Screen issue

Issues	Solutions
The power LED is off. The screen will not switch on.	Check that the power cable is connected properly. (Refer to "2.2 Connecting and Using a PC")
The message **Check Signal Cable** appears.	Check that the cable is properly connected to the product. (Refer to "2.2 Connecting and Using a PC")
	Check that the device connected to the product is powered on.
Not Optimum Mode is displayed.	This message appears when the signal from the graphics card exceeds the maximum resolution or frequency for the product.
	Change the maximum resolution and frequency to suit the product performance, referring to Standard Signal Mode Table (page 86).
The images on the screen look distorted.	Check the cable connection to the product (Refer to "2.2 Connecting and Using a PC")
The screen is not clear. The screen is blurry.	Adjust **Coarse** (page 53) and **Fine** (page 54).
	Remove any accessories (video extension cable, etc.) and try again.
	Set the resolution and frequency to the recommended level.
The screen appears unstable and shaky.	Check that the resolution and frequency for the PC are within the range of resolution and frequency compatible with the product. Next, if required, change the settings, referring to Standard Signal Mode Table (page 86) in this manual and the **INFORMATION** menu on the product.
There are shadows or ghost images left on the screen.	
The screen is too bright. The screen is too dark.	Adjust **Brightness** (page 35) and **Contrast** (page 36).
Screen color is inconsistent.	Change the **COLOR** settings. (Refer to " Configuring Tint")
The colors on the screen have a shadow and are distorted.	Change the **COLOR** settings. (Refer to " Configuring Tint")
White does not really look white.	Change the **COLOR** settings. (Refer to " Configuring Tint")

Issues	Solutions
There is no image on the screen and the power LED blinks every 0.5 to 1 second.	The product is operating in power-saving mode.
	Press any key on the keyboard or move the mouse to return to normal operating mode.

Source device issue

Issues	Solutions
A beeping sound is heard when my PC is booting.	If a beeping sound is heard when your PC is booting, have your PC serviced.

The LED lights on the frame of the product may be seen depending on the user's viewing angle. The light is harmless to people and has no bearing on product features and performance. The product is safe to use.

9.2 Q & A

Question	Answer
How can I change the frequency?	Set the frequency on your graphics card. • Windows XP: Go to **Control Panel** → **Appearance and Themes** → **Display** → **Settings** → **Advanced** → **Monitor**, and adjust **Refresh rate** under **Monitor settings**. • Windows ME/2000: Go to **Control Panel** → **Display** → **Settings** → **Advanced** → **Monitor**, and adjust **Refresh rate** under **Monitor settings**. • Windows Vista: Go to **Control Panel** → **Appearance and Personalization** → **Personalization** → **Display Settings** → **Advanced Settings** → **Monitor**, and adjust **Refresh rate** under **Monitor settings**. • Windows 7: Go to **Control Panel** → **Appearance and Personalization** → **Display** → **Screen Resolution** → **Advanced settings** → **Monitor**, and adjust **Refresh rate** under **Monitor settings**. • Windows 8: Go to **Settings** → **Control Panel** → **Appearance and Personalization** → **Display** → **Screen Resolution** → **Advanced settings** → **Monitor**, and adjust **Refresh rate** under **Monitor settings**.

Question	Answer
How can I change the resolution?	• Windows XP: Go to **Control Panel** → **Appearance and Themes** → **Display** → **Settings**, and adjust the resolution. • Windows ME/2000: Go to **Control Panel** → **Display** → **Settings**, and adjust the resolution. • Windows Vista: Go to **Control Panel** → **Appearance and Personalization** → **Personalize** → **Display Settings**, and adjust the resolution. • Windows 7: Go to **Control Panel** → **Appearance and Personalization** → **Display** → **Adjust Resolution**, and adjust the resolution. • Windows 8: Go to **Settings** → **Control Panel** → **Appearance and Personalization** → **Display** → **Adjust Resolution**, and adjust the resolution.
How do I set power-saving mode?	• Windows XP: Set power-saving mode in **Control Panel** → **Appearance and Themes** → **Display** → **Screen Saver Settings** or BIOS SETUP on the PC. • Windows ME/2000: Set power-saving mode in **Control Panel** → **Display** → **Screen Saver Settings** or BIOS SETUP on the PC. • Windows Vista: Set power-saving mode in **Control Panel** → **Appearance and Personalization** → **Personalize** → **Screen Saver Settings** or BIOS SETUP on the PC. • Windows 7: Set power-saving mode in **Control Panel** → **Appearance and Personalization** → **Personalize** → **Screen Saver Settings** or BIOS SETUP on the PC. • Windows 8: Set power-saving mode in **Settings** → **Control Panel** → **Appearance and Personalization** → **Personalize** → **Screen Saver Settings** or BIOS SETUP on the PC.

Refer to the user manual for your PC or graphics card for further instructions on adjustment.

10.1 General (S19E310HY)

Model Name		S19E310HY
Panel	Size	18.5 Inches (47 cm)
	Display area	409.8 mm (H) x 230.4 mm (V) 16.1 Inches (H) x 9.1 Inches (V)
	Pixel Pitch	0.300 mm (H) x 0.300 mm (V) 0.011811 Inches (H) x 0.011811 Inches (V)
Power Supply		AC 100 - 240 V ~ (+/- 10%), 50/60 Hz ± 3 Hz Refer to the label at the back of the product as the standard voltage can vary in different countries.
Dimensions (W x H x D) / Weight	Without Stand	447.1 x 271.2 x 89.8 mm 17.6 x 10.7 x 3.5 Inches
	With Stand	447.1 x 352.8 x 189.7 mm / 2.40 kg 17.6 x 13.9 x 7.5 Inches / 5.3 lbs
VESA Mounting Interface		75 x 75 mm 3.0 x 3.0 Inches (For use with Specialty(Arm) Mounting hardware.)
Environmental considerations	Operating	Temperature : 50°F – 104°F (10°C – 40°C) Humidity : 10% – 80%, non-condensing
	Storage	Temperature : -4°F – 113°F (-20°C – 45°C) Humidity : 5% – 95%, non-condensing

Plug-and-Play

This monitor can be installed and used with any Plug-and-Play compatible systems. Two-way data exchange between the monitor and PC system optimizes the monitor settings. Monitor installation takes place automatically. However, you can customize the installation settings if desired.

Panel Dots (Pixels)

Due to the nature of the manufacturing of this product, approximately 1 pixel per million (1ppm) may be brighter or darker on the LCD panel. This does not affect product performance.

The above specifications are subject to change without notice to improve quality.

This device is a Class B digital apparatus.

(USA only)

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website:

www.samsung.com/recyclingdirect or call, (877) 278 - 0799

10.2 General (S22E310HY / S22E310H)

Model Name		S22E310HY / S22E310H
Panel	Size	21.5 Inches (54 cm)
	Display area	476.64 mm (H) x 268.11 mm (V) 18.8 Inches (H) x 10.6 Inches (V)
	Pixel Pitch	0.24825 mm (H) x 0.24825 mm (V) 0.009774 Inches (H) x 0.009774 Inches (V)
Power Supply		AC 100 - 240 V ~ (+/- 10%), 50/60 Hz ± 3 Hz Refer to the label at the back of the product as the standard voltage can vary in different countries.
Dimensions (W x H x D) / Weight	Without Stand	513.7 x 308.6 x 90.4 mm 20.2 x 12.1 x 3.6 Inches
	With Stand	513.7 x 390.5 x 189.7 mm / 3.32 Kg 20.2 x 15.4 x 7.5 Inches / 7.3 lbs
VESA Mounting Interface		75 x 75 mm 3.0 x 3.0 Inches (For use with Specialty(Arm) Mounting hardware.)
Environmental considerations	Operating	Temperature : 50°F – 104°F (10°C – 40°C) Humidity : 10% – 80%, non-condensing
	Storage	Temperature : -4°F – 113°F (-20°C – 45°C) Humidity : 5% – 95%, non-condensing

Plug-and-Play

This monitor can be installed and used with any Plug-and-Play compatible systems. Two-way data exchange between the monitor and PC system optimizes the monitor settings. Monitor installation takes place automatically. However, you can customize the installation settings if desired.

Panel Dots (Pixels)

Due to the nature of the manufacturing of this product, approximately 1 pixel per million (1ppm) may be brighter or darker on the LCD panel. This does not affect product performance.

The above specifications are subject to change without notice to improve quality.

This device is a Class B digital apparatus.

(USA only)

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website:

www.samsung.com/recyclingdirect or call, (877) 278 - 0799

10.3 General (S24E310HL)

Model Name		S24E310HL
Panel	Size	23.6 Inches (59 cm)
	Display area	521.28 mm (H) x 293.22 mm (V) 20.5 Inches (H) x 11.5 Inches (V)
	Pixel Pitch	0.2715 mm (H) x 0.2715 mm (V) 0.010689 Inches (H) x 0.010689 Inches (V)
Power Supply		AC 100 - 240 V ~ (+/- 10%), 50/60 Hz ± 3 Hz Refer to the label at the back of the product as the standard voltage can vary in different countries.
Dimensions (W x H x D) / Weight	Without Stand	561.6 x 335.7 x 93.3 mm 22.1 x 13.2 x 3.7 Inches
	With Stand	561.6 x 417.5 x 200.7 mm / 4.0 Kg 22.1 x 16.4 x 7.9 Inches / 8.8 lbs
VESA Mounting Interface		75 x 75 mm 3.0 x 3.0 Inches (For use with Specialty(Arm) Mounting hardware.)
Environmental considerations	Operating	Temperature : 50°F – 104°F (10°C – 40°C) Humidity : 10% – 80%, non-condensing
	Storage	Temperature : -4°F – 113°F (-20°C – 45°C) Humidity : 5% – 95%, non-condensing

Plug-and-Play

This monitor can be installed and used with any Plug-and-Play compatible systems. Two-way data exchange between the monitor and PC system optimizes the monitor settings. Monitor installation takes place automatically. However, you can customize the installation settings if desired.

Panel Dots (Pixels)

Due to the nature of the manufacturing of this product, approximately 1 pixel per million (1ppm) may be brighter or darker on the LCD panel. This does not affect product performance.

The above specifications are subject to change without notice to improve quality.

This device is a Class B digital apparatus.

(USA only)

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website:

www.samsung.com/recyclingdirect or call, (877) 278 - 0799

10.4 General (S27E310H)

Model Name		S27E310H
Panel	Size	27 Inches (68 cm)
	Display area	597.6 mm (H) x 336.15 mm (V) 23.5 Inches (H) x 13.2 Inches (V)
	Pixel Pitch	0.3114 mm (H) x 0.3114 mm (V) 0.01226 Inches (H) x 0.01226 Inches (V)
Power Supply		AC 100 - 240 V ~ (+/- 10%), 50/60 Hz ± 3 Hz Refer to the label at the back of the product as the standard voltage can vary in different countries.
Dimensions (W x H x D) / Weight	Without Stand	643.4 x 385.3 x 95.1 mm 25.3 x 15.2 x 3.7 Inches
	With Stand	643.4 x 463.1 x 200.7 mm / 4.9 Kg 25.3 x 18.2 x 7.9 Inches / 10.8 lbs
VESA Mounting Interface		75 x 75 mm 3.0 x 3.0 Inches (For use with Specialty(Arm) Mounting hardware.)
Environmental considerations	Operating	Temperature : 50°F – 104°F (10°C – 40°C) Humidity : 10% – 80%, non-condensing
	Storage	Temperature : -4°F – 113°F (-20°C – 45°C) Humidity : 5% – 95%, non-condensing

Plug-and-Play

This monitor can be installed and used with any Plug-and-Play compatible systems. Two-way data exchange between the monitor and PC system optimizes the monitor settings. Monitor installation takes place automatically. However, you can customize the installation settings if desired.

Panel Dots (Pixels)

Due to the nature of the manufacturing of this product, approximately 1 pixel per million (1ppm) may be brighter or darker on the LCD panel. This does not affect product performance.

The above specifications are subject to change without notice to improve quality.

This device is a Class B digital apparatus.

(USA only)

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website:

www.samsung.com/recyclingdirect or call, (877) 278 - 0799

10.5 PowerSaver

The power-saving function of this product reduces power consumption by switching off the screen and making the Power LED blink if the product is not used for a specified period of time. The power is not turned off in power-saving mode. To switch the screen back on, press any key on the keyboard or move the mouse. Power-saving mode functions only when the product is connected to a PC that has a power-saving function.

PowerSaver	Energy Star Power Consumption	Power saving mode	Power off (Power button)
Power Indicator	Off	Blinking	On
Power Consumption (S19E310HY)	Typical 12.1 W	Typical 0.3 W Max 0.45 W	Less than 0.3 W
Power Consumption (S22E310HY)	Typical 20.6 W	Typical 0.3 W Max 0.45 W	Less than 0.3 W
Power Consumption (S22E310H)	Typical 18.0 W	Typical 0.3 W Max 0.45 W	Less than 0.3 W
Power Consumption (S24E310HL)	Typical 18.9 W	Typical 0.3 W Max 0.45 W	Less than 0.3 W
Power Consumption (S27E310H)	Typical 23.4 W	Typical 0.3 W Max 0.45 W	Less than 0.3 W

- The power consumption level can vary in different operating conditions or when settings are changed.
- ENERGY STAR® is a US registered mark of the United States Environmental Protection Agency.

  Energy Star power is measured with the test method in the current Energy Star® Standard.
- To reduce the power consumption to 0, disconnect the power cord. Be sure to disconnect the power cable when you will not be using the product for an extended period of time. To reduce the power consumption to 0 W when the power switch is not available, disconnect the power cable.

10.6 Standard Signal Mode Table

- This product can be set to only one resolution for each screen size to obtain the optimum picture quality due to the nature of the panel. Therefore, a resolution other than the specified resolution may degrade the picture quality. To avoid this, it is recommended that you select the optimum resolution specified for the screen size of your product.
- Check the frequency when you exchange a CDT monitor (connected to a PC) for an LCD monitor. If the LCD monitor does not support 85 Hz, change the vertical frequency to 60 Hz using the CDT monitor before you exchange it with the LCD monitor.

Model Name		S22E310HY / S22E310H / S24E310HL / S27E310H	S19E310HY
Synchronization	Horizontal Frequency	30 – 81 kHz	
	Vertical Frequency	56 – 75 Hz	
Resolution	Optimum Resolution	1920 x 1080 @ 60 Hz	1366 x 768 @ 60 Hz
	Maximum Resolution	1920 x 1080 @ 60 Hz	1366 x 768 @ 60 Hz

If a signal that belongs to the following standard signal modes is transmitted from your PC, the screen will automatically be adjusted. If the signal transmitted from the PC does not belong to the standard signal modes, the screen may be blank even though the power LED turns on. In such a case, change the settings according to the following table by referring to the graphics card user manual.

S19E310HY

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 720 x 400	31.469	70.087	28.322	–/+
VESA, 640 x 480	31.469	59.940	25.175	–/–
MAC, 640 x 480	35.000	66.667	30.240	–/–
VESA, 640 x 480	37.861	72.809	31.500	–/–
VESA, 640 x 480	37.500	75.000	31.500	–/–
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
MAC, 832 x 624	49.726	74.551	57.284	–/–

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
VESA, 1024 x 768	48.363	60.004	65.000	–/–
VESA, 1024 x 768	56.476	70.069	75.000	–/–
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1280 x 720	45.000	60.000	74.250	+/+
VESA, 1366 x 768	47.712	59.790	85.500	+/+

S22E310HY / S22E310H / S24E310HL / S27E310H

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 720 x 400	31.469	70.087	28.322	-/+
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
MAC, 1152 x 870	68.681	75.062	100.000	-/-
VESA, 640 x 480	31.469	59.940	25.175	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1152 x 864	67.500	75.000	108.000	+/+
VESA, 1280 x 720	45.000	60.000	74.250	+/+
VESA, 1280 x 800	49.702	59.810	83.500	-/+
VESA, 1280 x 1024	63.981	60.020	108.000	+/+
VESA, 1280 x 1024	79.976	75.025	135.000	+/+
VESA, 1440 x 900	55.935	59.887	106.500	-/+
VESA, 1600 x 900 (RB)	60.000	60.000	108.000	+/+

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
VESA, 1680 x 1050	65.290	59.954	146.250	-/+
VESA, 1920 x 1080	67.500	60.000	148.500	+/+

- Horizontal Frequency

  The time required to scan a single line from the left to the right side of the screen is called a horizontal cycle. The reciprocal number of a horizontal cycle is called horizontal frequency. Horizontal frequency is measured in kHz.

- Vertical Frequency

  Repeating the same picture dozens of times per second allows you to view natural pictures. The repeat frequency is called "vertical frequency" or "refresh rate" and is indicated in Hz.

Contact SAMSUNG WORLD WIDE

If you have any questions or comments relating to Samsung products, please contact the SAMSUNG customer care center.

NORTH AMERICA		
U.S.A	1-800-SAMSUNG (726-7864)	http://www.samsung.com/us/support
CANADA	1-800-SAMSUNG (726-7864)	http://www.samsung.com/ca/support (English) http://www.samsung.com/ca_fr/support (French)

LATIN AMERICA		
ARGENTINE	0800-333-3733	http://www.samsung.com/ar/support
BOLIVIA	800-10-7260	http://www.samsung.com/cl/support
BRAZIL	0800-124-421 (Demais cidades e regiões) 4004-0000 (Capitais e grandes centros)	http://www.samsung.com/br/support
CHILE	800-SAMSUNG (726-7864)	http://www.samsung.com/cl/support
COLOMBIA	Bogotá 600 12 72 Gratis desde cualquier parte del país 01 8000 112 112 ó desde su celular #SAM(726)	http://www.samsung.com/co/support
COSTA RICA	0-800-507-7267 00-800-1-SAMSUNG (726-7864)	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)
DOMINICA	1-800-751-2676	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)
ECUADOR	1-800-10-72670 1-800-SAMSUNG (72-6786)	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)

LATIN AMERICA		
EL SALVADOR	800-6225	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)
GUATEMALA	1-800-299-0013 1-800-299-0033	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)
HONDURAS	800-27919267 800-2791-9111	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)
JAMAICA	1-800-234-7267 1-800-SAMSUNG (726-7864)	http://www.samsung.com/latin_en/support (English)
MEXICO	01-800-SAMSUNG (726-7864)	http://www.samsung.com/mx/support
NICARAGUA	001-800-5077267	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)
PANAMA	800-7267 800-0101	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)
PARAGUAY	009-800-542-0001	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)
PERU	0-800-777-08	http://www.samsung.com/pe/support
PUERTO RICO	1-800-682-3180	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)
TRINIDAD & TOBAGO	1-800-SAMSUNG (726-7864)	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)

LATIN AMERICA		
URUGUAY	000-405-437-33	http://www.samsung.com/latin/support (Spanish) http://www.samsung.com/latin_en/support (English)
VENEZUELA	0-800-SAMSUNG (726-7864)	http://www.samsung.com/ve/support

EUROPE		
AUSTRIA	0800 - SAMSUNG (0800 - 7267864)	http://www.samsung.com/at/support
BELGIUM	02-201-24-18	http://www.samsung.com/be/support (Dutch) http://www.samsung.com/be_fr/support (French)
BOSNIA	051 331 999	http://www.samsung.com/support
BULGARIA	800 111 31, Безплатна телефонна линия	http://www.samsung.com/bg/support
CROATIA	072 726 786	http://www.samsung.com/hr/support
CYPRUS	8009 4000 only from landline, toll free	http://www.samsung.com/gr/support
CZECH	800 - SAMSUNG (800-726786)	http://www.samsung.com/cz/support
	Samsung Electronics Czech and Slovak, s.r.o. V Parku 2343/24, 148 00 - Praha 4	
DENMARK	70 70 19 70	http://www.samsung.com/dk/support
EIRE	0818 717100	http://www.samsung.com/ie/support
ESTONIA	800-7267	http://www.samsung.com/ee/support
FINLAND	030-6227 515	http://www.samsung.com/fi/support
FRANCE	01 48 63 00 00	http://www.samsung.com/fr/support

EUROPE		
GERMANY	0180 6 SAMSUNG bzw. 0180 6 7267864* (*0,20 €/Anruf aus dem dt. Festnetz, aus dem Mobilfunk max. 0,60 €/Anruf)	http://www.samsung.com/de/support
GREECE	80111-SAMSUNG (80111 726 7864) only from land line (+30) 210 6897691 from mobile and land line	http://www.samsung.com/gr/support
HUNGARY	0680SAMSUNG (0680-726-786) 0680PREMIUM (0680-773-648)	http://www.samsung.com/hu/support
ITALIA	800-SAMSUNG (800.7267864)	http://www.samsung.com/it/support
LATVIA	8000-7267	http://www.samsung.com/lv/support
LITHUANIA	8-800-77777	http://www.samsung.com/lt/support
LUXEMBURG	261 03 710	http://www.samsung.com/support
MONTENEGRO	020 405 888	http://www.samsung.com/support
NETHERLANDS	0900-SAMSUNG (0900-7267864) (€ 0,10/Min)	http://www.samsung.com/nl/support
NORWAY	815 56480	http://www.samsung.com/no/support
POLAND	0 801-172-678* lub +48 22 607-93-33 * * (koszt połączenia według taryfy operatora)	http://www.samsung.com/pl/support
PORTUGAL	808 20 7267	http://www.samsung.com/pt/support
ROMANIA	08008 726 78 64 (08008 SAMSUNG) Apel GRATUIT	http://www.samsung.com/ro/support
SERBIA	011 321 6899	http://www.samsung.com/rs/support
SLOVAKIA	0800 - SAMSUNG (0800-726 786)	http://www.samsung.com/sk/support
SLOVENIA	080 697 267 090 726 786	http://www.samsung.com/si

EUROPE		
SPAIN	0034902172678	http://www.samsung.com/es/support
SWEDEN	0771 726 7864 (SAMSUNG)	http://www.samsung.com/se/support
SWITZERLAND	0800 726 78 64 (0800-SAMSUNG)	http://www.samsung.com/ch/support (German) http://www.samsung.com/ch_fr/support (French)
UK	0330 SAMSUNG (7267864)	http://www.samsung.com/uk/support

CIS		
ARMENIA	0-800-05-555	http://www.samsung.com/support
AZERBAIJAN	0-88-555-55-55	http://www.samsung.com/support
BELARUS	810-800-500-55-500	http://www.samsung.com/support
GEORGIA	0-800-555-555	http://www.samsung.com/support
KAZAKHSTAN	8-10-800-500-55-500 (GSM: 7799, VIP care 7700)	http://www.samsung.com/support
KYRGYZSTAN	8-10-800-500-55-500	http://www.samsung.com/kz_ru/support
MOLDOVA	0-800-614-40	http://www.samsung.com/support
MONGOLIA	7-495-363-17-00	http://www.samsung.com/support
RUSSIA	8-800-555-55-55	http://www.samsung.com/ru/support
TADJIKISTAN	8-10-800-500-55-500	http://www.samsung.com/support
UKRAINE	0-800-502-000	http://www.samsung.com/ua/support (Ukrainian) http://www.samsung.com/ua_ru/support (Russian)
UZBEKISTAN	8-10-800-500-55-500	http://www.samsung.com/support

CHINA		
CHINA	400-810-5858	http://www.samsung.com/cn/support
HONG KONG	(852) 3698 4698	http://www.samsung.com/hk/support (Chinese) http://www.samsung.com/hk_en/support (English)
MACAU	0800 333	http://www.samsung.com/support

S.E.A		
AUSTRALIA	1300 362 603	http://www.samsung.com/au/support
INDONESIA	021-56997777 08001128888	http://www.samsung.com/id/support
JAPAN	0120-363-905	http://www.samsung.com/jp/support
MALAYSIA	1800-88-9999 603-77137477 (Overseas contact)	http://www.samsung.com/my/support
MYANMAR	01-2399888	http://www.samsung.com/support
NEW ZEALAND	0800 726 786	http://www.samsung.com/nz/support
PHILIPPINES	1-800-10-7267864 [PLDT] 1-800-8-7267864 [Globe landline and Mobile] 02-4222111 [Other landline]	http://www.samsung.com/ph/support
SINGAPORE	1800-SAMSUNG (726-7864)	http://www.samsung.com/sg/support
TAIWAN	0800-329999	http://www.samsung.com/tw/support
THAILAND	0-2689-3232, 1800-29-3232	http://www.samsung.com/th/support
VIETNAM	1800 588 889	http://www.samsung.com/vn/support

S.W.A		
BANGLADESH	09612300300	http://www.samsung.com/in/support

S.W.A		
INDIA	1800 3000 8282 - Toll Free 1800 266 8282 - Toll Free	http://www.samsung.com/in/support
SRI LANKA	0094117540540 0094115900000	http://www.samsung.com/support

MENA		
ALGERIA	021 36 11 00	http://www.samsung.com/n_africa/support
BAHRAIN	8000-GSAM (8000-4726)	http://www.samsung.com/ae/support (English) http://www.samsung.com/ae_ar/support (Arabic)
EGYPT	08000-726786 16580	http://www.samsung.com/eg/support
IRAN	021-8255	http://www.samsung.com/iran/support
JORDAN	0800-22273 06 5777444	http://www.samsung.com/Levant/support (English)
KUWAIT	183-CALL (183-2255)	http://www.samsung.com/ae/support (English) http://www.samsung.com/ae_ar/support (Arabic)
MOROCCO	080 100 22 55	http://www.samsung.com/n_africa/support
OMAN	800-SAMSUNG (800 - 726 7864)	http://www.samsung.com/ae/support (English) http://www.samsung.com/ae_ar/support (Arabic)
PAKISTAN	0800-Samsung (72678)	http://www.samsung.com/pk/support
QATAR	800-CALL (800-2255)	http://www.samsung.com/ae/support (English) http://www.samsung.com/ae_ar/support (Arabic)
SAUDI ARABIA	920021230	http://www.samsung.com/sa/support http://www.samsung.com/sa_en/support (English)

MENA		
SYRIA	18252273	http://www.samsung.com/Levant/support (English)
TUNISIA	80-1000-12	http://www.samsung.com/n_africa/support
TURKEY	444 77 11	http://www.samsung.com/tr/support
U.A.E	800-SAMSUNG (800 - 726 7864)	http://www.samsung.com/ae/support (English) http://www.samsung.com/ae_ar/support (Arabic)

AFRICA		
BOTSWANA	8007260000	http://www.samsung.com/support
BURUNDI	200	http://www.samsung.com/support
CAMEROON	7095-0077	http://www.samsung.com/africa_fr/support
COTE D' IVOIRE	8000 0077	http://www.samsung.com/africa_fr/support
DRC	499999	http://www.samsung.com/support
GHANA	0800-10077 0302-200077	http://www.samsung.com/africa_en/support
KENYA	0800 545 545	http://www.samsung.com/support
MOZAMBIQUE	847267864 / 827267864	http://www.samsung.com/support
NAMIBIA	08 197 267 864	http://www.samsung.com/support
NIGERIA	0800-726-7864	http://www.samsung.com/africa_en/support
RWANDA	9999	http://www.samsung.com/support
SENEGAL	800-00-0077	http://www.samsung.com/africa_fr/support
SOUTH AFRICA	0860 SAMSUNG (726 7864)	http://www.samsung.com/support
SUDAN	1969	http://www.samsung.com/support
TANZANIA	0800 755 755	http://www.samsung.com/support
UGANDA	0800 300 300	http://www.samsung.com/support
ZAMBIA	0211 350370	http://www.samsung.com/support

Responsibility for the Pay Service (Cost to Customers)

When the service is requested, in spite of in warranty, we may charge you for a visit from a service technician in the following cases.

Not a product defect

Cleaning of the product, Adjustment, Explanation, Re-installation and etc.

- If a service technician gives instructions on how to use product or simply adjusts options without disassembling product.
- If a defect is caused by external environmental factors. (Internet, Antenna, Wired Signal, etc.)
- If a product is reinstalled or devices are connected additionally after installing the purchased product for the first time.
- If a product is reinstalled to move to a different spot or to move to a different house.
- If customer requests instructions on how to use because of another company's product.
- If customer requests instructions on how to use the network or another company's program.
- If customer requests software installation and setup for the product.
- If a service technician removes/cleans dusts or foreign materials inside of the product.
- If customer requests an installation additionally after purchasing a product through home-shopping or online.

A Product damage caused by customer's fault

Product damage caused by customer's mishandling or wrong repair

If a product damage is caused by;

- external impact or drop.
- use of supplies or separately sold product unspecified by Samsung.
- repair from a person besides an engineer of outsourcing service company or partner of Samsung Electronics Co., Ltd.
- remodeling or repairing the product by customer.
- using it with incorrect voltage or non-authorised electrical connections.
- not following the "cautions" in User Manual.

Others

- If product fails by natural disaster. (lightning, fire, earthquake, flood damage, etc)
- If consumable components are all used up. (Battery, Toner, Fluorescent lights, Head, Vibrator, Lamp, Filter, Ribbon, etc.)

If customer requests a service in case the product has no defect, service fee may be charged. So please read User Manual first.

Correct Disposal

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

Terminology

OSD (On Screen Display)

On screen display (OSD) allows you to customize on-screen settings to optimize the picture quality as required. You can change the screen brightness, tint, size and many other settings using menus displayed on the screen.

Gamma

The Gamma menu adjusts the grey scale that represents middle tones on the screen. Adjusting the brightness brightens the whole screen, but adjusting Gamma only brightens the medium brightness.

Grey scale

Scale refers to levels of color intensity that show variations of color change from darker areas to brighter areas on the screen. Changes to the screen brightness are expressed with black and white variation, and grey scale refers to the medium area between black and white. Changing the grey scale through Gamma adjustment will change the medium brightness on the screen.

Scanning rate

Scanning rate, or refresh rate, refers to the frequency of screen refreshes. Screen data is transmitted as it refreshes to display an image, although the refreshing is invisible to the naked eye. The number of screen refreshes is called scanning rate and is measured in Hz. A scanning rate of 60Hz means that the screen refreshes 60 times per second. The screen scanning rate depends on the performance of the graphics cards in your PC and monitor.

Horizontal Frequency

Characters or images displayed on the monitor screen consist of numerous dots (pixels). Pixels are transmitted in horizontal lines, which are then arranged vertically to create an image. The horizontal frequency is measured in kHz and represents how many times horizontal lines per second are transmitted and displayed on the monitor screen. A horizontal frequency of 85 means that the horizontal lines that make up an image are transmitted 85000 times per second. The horizontal frequency is indicated in 85kHz.

Vertical Frequency

One image is made of numerous horizontal lines. The vertical frequency is measured in Hz and represents how many images can be created per second by those horizontal lines. A vertical frequency of 60 means that an image is transmitted 60 times per second. The vertical frequency is also called "refresh rate" and affects screen flicker.

Resolution

Resolution is the number of horizontal pixels and vertical pixels that form a screen. It represents the level of display detail.

A higher resolution displays a greater amount of information on the screen and is suitable for performing multiple tasks at the same time.

E.g. A resolution of 1920 x 1080 consists of 1920 horizontal pixels (horizontal resolution) and 1080 vertical lines (vertical resolution).

Plug & Play

The Plug & Play feature allows the automatic exchange of information between a monitor and PC to produce an optimum display environment.

The monitor uses VESA DDC (international standard) to execute Plug & Play.

Index

B

Before Connecting 30

Blue 57

Brightness 35

C

Checking the Contents 19

Cleaning 8

Coarse 53

Color Tone 58

Connecting and Using a PC 30

Contact SAMSUNG WORLD WIDE 89

Contrast 36

Copyright 7

Correct Disposal 98

Correct posture to use the product 18

D

Display Time 62

E

Easy Setting Box 74

Eco Saving Plus 65

Eye Saver Mode 38

F

Fine 54

G

Game Mode 39

Gamma 59

General 81, 82, 83, 84

Green 56

H

HDMI Black Level 48

I

Image Size 46

INFORMATION 72

Installation 25

K

Key Repeat Time 69

L

Language 60

O

Off Timer 66

P

Parts 20

PC/AV Mode 68

Power LED On 71

PowerSaver 85

Q

Q & A 79

R

Red 55

Requirements Before Contacting Samsung Customer Service Center 76

Reset All 64

Response Time 50

Responsibility for the Pay Service (Cost to Customers) 97

Index

S

Safety Precautions 10

SAMSUNG MAGIC Angle 42

SAMSUNG MAGIC Bright 40

SAMSUNG MAGIC Upscale 44

Sharpness 37

Source Detection 70

Standard Signal Mode Table 86

T

Terminology 99

Transparency 63